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CAMPUS PLAN:

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INTRODUCTION

Virginia Polytechnic Institute, like many other large residential universities, has encountered uncertainties as it has attempted to plan for its future residence halls. In the spring of 1964, Virginia Tech dramatically changed its residential complex by establishing a voluntary Corps of Cadets, as opposed to a mandatory one which had been predominant for the first 90 years of its history.

Residence halls that had been constructed prior to 1964 and those that were on the drawing board at that time had been designed to complement the military system included in the Virginia Tech program. The majority of the civilian student body thought it necessary to re-evaluate previous planning practices for future residence halls. In January, 1968, a meeting was called by the executive vice president of the university to discuss ways of determining appropriate construction of student housing for this university. This group was composed of a cross section of faculty, student personnel, and administration people whose interests were in attempting to develop plans for residential housing for the future. This group shortly became known as the Living-Learning Committee. Its purpose was to gain information regarding student housing concepts, to establish goals and objectives for student housing, to explore concepts utilized at other universities as they relate to residence halls, and to search for
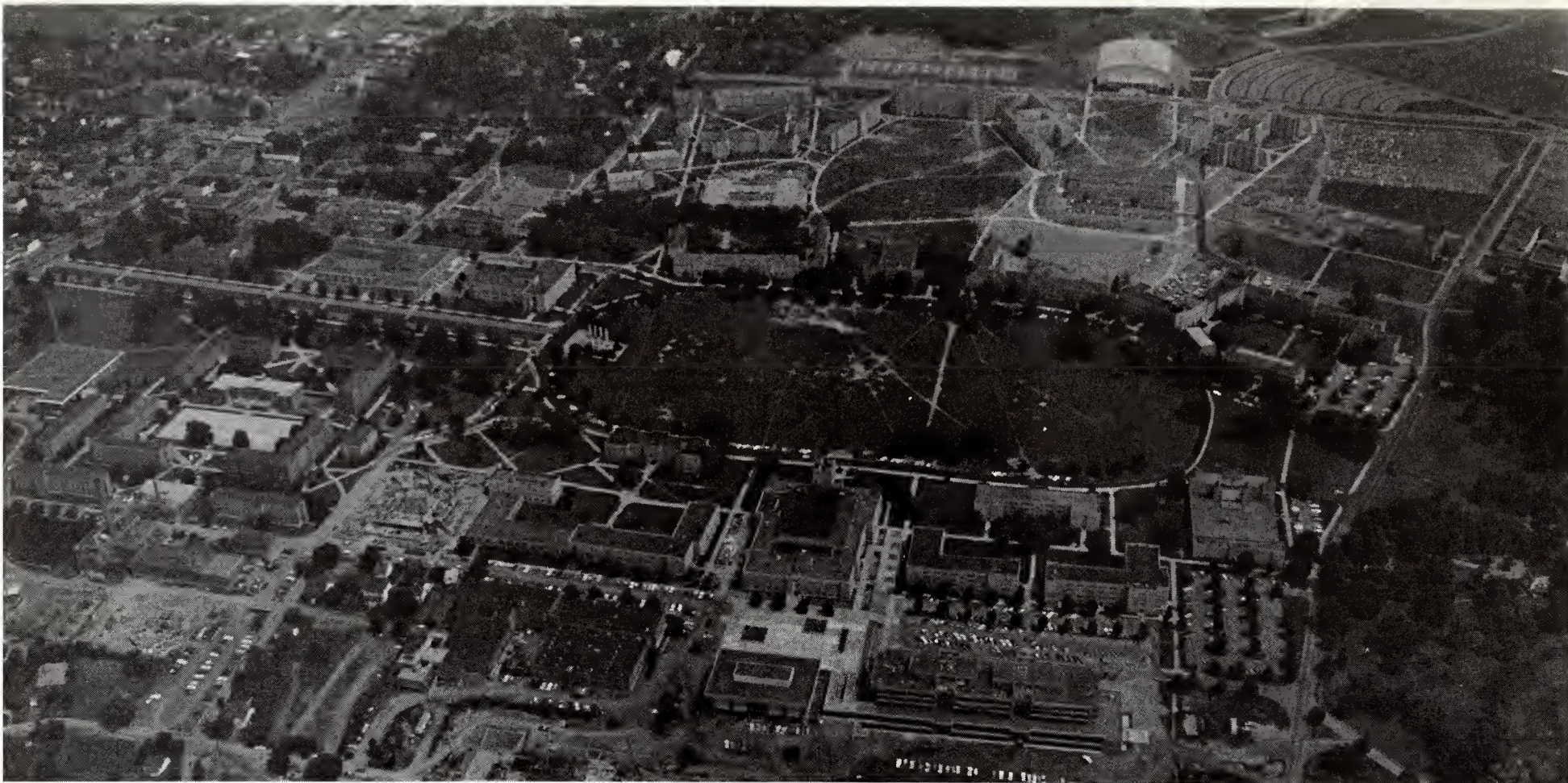
responses which could contribute to the establishment of patterns of student attitudes and interests.

The first objective of the committee was to determine if there was a need for student housing on the university campus. The immediate reaction of the group was the need definitely did exist; however, after examining the idea more thoroughly it was decided that there was reason to explore to a greater extent the possibility of off-campus housing.

The second objective of this committee was to develop a housing program which would provide an adequate university environment conducive to the academic, social, and physical aspects of a student's university life. Additional concerns of primary consideration were coeducational living and learning facilities, renovation of certain housing facilities, a regard for flexibility of units and sub-units which will provide greater social and cultural exchange, and the overall upgrading of programs in the housing interest.

As the committee penetrated these objectives in breadth and depth the following questions began to emerge as issues of concern:

1. How many and how many kinds of housing units should be built?
2. Are there greater advantages in the
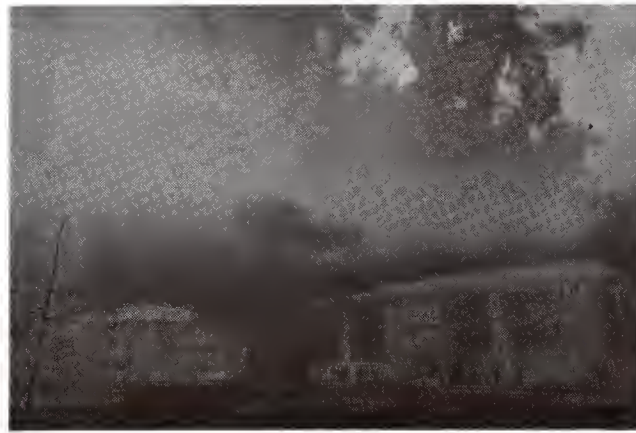
living-learning environment over the present living arrangements?

3. What are the economic feasibility considerations?

4. Who pays for and who benefits from student residential units?

5. What type unit does the student desire?

6. Does the student know what his desires are?

7. What students are privileged to live in which units?

8. How can the university accurately predict what students want and need for housing?

9. Can a predictive model or predictive method be determined which will accurately forecast these interests and needs?

10. What will be the problems created by age differences caused by the community college system and the upper division versus the lower division of student delineation?

With these questions in mind, the committee began a search in an attempt to establish a criteria relevant to the university mission. The following resulted:

1. A major activity in education is serving students and faculty and providing the facilities of a healthy university environment.

2. Programs which constitute activity outside the classrooms should be supported other than by tuition fees.

3. It may be desirable to seek private support for the maintenance of the auxiliary facilities for higher education, provided adequate controls may be satisfied, thus allowing the total effort of the university to be directed to the academic role.

As a consequence of these deliberations,

questions, and criteria, the committee felt that they might better react to their responsibilities after an exchange of thoughts with some of the people actively working and researching in the areas of university housing. In February, 1965, a symposium called *VPI, Campus Planning* was held on the Virginia Tech campus for the purpose of evolving concepts for master planning. A second symposium entitled *Campus Plan II: University Housing Concepts,* resulted as a response to the Living-Learning Committee involvement. This publication is a reasonably accurate account of the information that was produced and exchanged during this two-day symposium. It has been impossible to include all of the dialogue transferred during this meeting; however, it is felt that the impressions presented from this symposium are knowledgeable and accurate.

The Living-Learning Committee has continued its deliberations and in fact is still in search of responses to the housing needs of this campus. It is particularly interested in establishing a program which will creatively satisfy the needs of today's students, while maintaining a flexibility to meet student and university requirements of the future. The deliberation and conclusions of this publication should not suggest feelings of satisfaction of having overcome the housing dilemmas of universities, but should be looked upon as tools to be used in the continuing search.

This publication is prepared with the hope that it may attract the reader's interest to certain areas which are common concerns of universities. Hopefully, it will provide some platform to continue creative and flexible programming, planning, and budgeting for university housing concepts.

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Blacksburg, Virginia
November, 1969

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CAMPUS PLAN:

SYMPOSIUM

MARGARET FARMER

A graduate of Louisiana State University with a degree in architectural engineering, Mrs. Farmer spent four years on the staff of *Architectural Record,* with primary responsibility for technical articles. She then joined Educational Facilities Laboratories, Inc., as editorial associate. In this position she is particularly concerned with problems of student housing and over-all campus planning.

JONATHAN KING

Currently vice president and treasurer of Educational Facilities Laboratories, Inc., in New York City, King has served in this position since 1967. He previously served as secretary and treasurer of EFL from 1958 to 1967 and staff associate of the Ford Foundation and Fund for the Advancement of Education from 1952 to 1958. He holds a B.A. from Columbia University and is the author of articles published in *Saturday Review, Architectural Record, The Canadian Architect, and Architectural Design.*

HAROLD C. RIKER

Currently director of the Division of Housing at the University of Florida, Riker has held this position since 1946 except for two years with the U.S. Navy during the Korean War and two years at the Teachers College of Columbia University completing graduate study. Working for his alma mater, Riker is responsible for planning new programs and new construction, and for coordination of all aspects of the university's housing system. He holds both B.A. and M.A. degrees from Florida and an Ed. D. from Columbia.

WILLIAM F. SHEPARD

A native of California, Shepard is currently serving as assistant vice president and university dean of his alma mater, the University of California at Berkeley. Earning A.B., M.A., and Ph.D. degrees at Berkeley, Shepard was appointed a lecturer in speech at his alma mater in 1947. In 1956 he was appointed dean of men and in 1958, dean of students for the Berkeley campus. In 1961 he was named associate director of relations with school; in 1962, acting director of schools; and in 1963, associate university dean of educational relations. He was named to his current position in 1966.

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A native of New York City, Harkness received both his bachelor and master of architecture degrees from the Harvard Graduate School of Design. Currently a principal in the firm of The Architects Collaborative in Cambridge, Mass., Harkness's work has been primarily devoted to educational and medical projects. His major buildings include the Childrens Hospital Medical Center in Boston; the Hoffman Laboratory at Harvard University; New Trier High School in Winnetka, Illinois; and the Hanley Educational Center in Providence, R.I.

GAR DAY DING

Professor and chairman of the Environmental Systems Studies at Virginia Polytechnic Institute, Ding has been a member of the Virginia Tech faculty since 1966. Born in China, Ding was educated in New Zealand and Australia. He practiced architecture and engineering in these two countries and served as senior lecturer in the Faculty of Architecture at the University of Sydney from 1959 to 1966. Ding has special interests in the development of valid systems concepts and approaches to architecture and environmental design.

MARGARET FARMER

Fortune magazine — a journal I have always thought of as a responsible voice of the Establishment and no spokesman for radical thought — opened its 1969 publishing year with a special issue called "American Youth: Its Outlook is Changing the World."

In a time when the popular press is filled with phrases like "student activism," "youthquake," "generation gap," "campus unrest," and the like — not to mention "rebellion" and even "revolution." When the popular culture is pervaded with styles and manners originating with the young, this is perhaps not news. Certainly it is not news to parents, teachers, and administrators who confront the young every day. It can be argued, too, that the proposition that youth's outlook is changing the world has always been true, if only because the people we call "youth" today has always been the same people who wind up running — and therefore changing — the world tomorrow.

But it strikes me, even so, that the statement is not just a provocative headline. It is also a sober acknowledgement by a sober source that this college generation, plus the generation now still in high school, but treading close on its heels (a generation these days seems to be about five years), is indeed

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unlike earlier groups of under-25s, and that it differs from its predecessors in ways whose nature we are only beginning to perceive and whose impact we are only beginning to predict.

It strikes me too that the emphasis is right: that the operative words are properly "outlook" and "change." For the significant difference between this college generation and those of 20 or even 10 years ago is precisely one of outlook — of attitudes and values — rather than merely of manners and mores.

Reams of paper are being printed, and more will follow, to explain why this is so, and the hypotheses touch everything from the affluent society, to "the Bomb," to the civil rights movement, to permissive child-rearing practices. From the colleges' point of view, other factors may be more directly pertinent: the fact that higher education has become more inclusive and less exclusive, with 60 per cent of high school graduates going on to college in 1967 as opposed to 30 per cent in 1947, and that its clientele has in the process become considerably more heterogeneous. Or the fact that students tend to be more mature — more of them are in graduate school, thus raising the average age level; more of them are married, with the greater seriousness and sense of responsibility that implies (or ought to); more of them come to college better prepared scholastically, more experienced socially, and more demanding academically.

But explaining the genesis of their changed outlook will not explain it away. It is there. And while all colleges are not Berkeley or Columbia, and all students are not radicals and revolutionaries, evidence is accumulating that a sizable minority of students already share the basic views of their activist colleagues on basic issues and that the time will not be long in coming when this minority tips over to a majority. All of them will not be activists to be sure, but they will form a solid constituency for those who are, and so will add their weight to the pressure for change.

These kids aren't kidding. They have every intention of changing the world because they don't much like it the way it is, and they have no intention of waiting until some commencement speaker launches them into the "real world" on a wave of platitudes. Furthermore, indications are that they will start with the piece of the world which is closest to hand — the college.

Thus far the youth rebellion, if it can yet be called that, has concentrated on rather grand, global matters — civil rights, Vietnam, politics, and grapes, more or less in that order. Where it has attacked higher education directly, it has tended to be — on the one hand — quite narrow and specific in its aims — visiting hours in dormitories, the precise number of blacks enrolled, and so on — or so broad and diffuse that I for one find it hard to divine just what it is they *are* after: "power?" yes, a "voice," "influence," "reform," "relevance." But what do they really mean by such terms? Do they know, themselves? Are they simply flexing their muscles? (Some of the more militant organizations, of course, make it a point of strategy to use relatively straight-forward demands as a cloak for their true goal, which they proudly profess is nothing less than revolution — but I haven't heard any very clear explanation of what they mean by that, either.)

As John Gardner points out in proposing "An Agenda for the Colleges and Universities" in a recent publication titled *Campus 1980:* "The student demonstration is a very imprecise instrument that turns up false issues as readily as real issues," but he goes on to note that, "if one reviews the various incidents involving students on campuses around the country and attempts to sift the real issues from the extraordinary clutter of emotion and recrimination, it becomes clear that nationwide the students have hit on at least one or two issues that go to the heart of the problem of the modern university." One of these

he says, is the question of whether undergraduate teaching is being neglected; the other is the question of anonymity and impersonality of student life.

Despite this, aside from matters like "intervisitation," the activists have so far left campus living conditions as such, pretty much alone. They have staged nothing like the 1766 rebellion at Harvard, which occurred over the quality of butter served in the commons, nor — though they've forced the resignation of a president or two — have they done so by refusing to live on campus, as they did at Yale a century later. They refuse to live on campus, all right, but where they live has not yet struck them as an issue worthy of a full-scale confrontation with authority.

But I believe it will. For I think Gardner is right, and by no means alone in his perception that much student unrest is closely linked to, if not now actively focused on, the overall quality of student life, which in turn is linked to where and how the student lives and to the relationships — or lack of them — which give him his peculiar sense of the institution as institution, and of himself as himself and as a member — or not — of the academic community.

I don't mean to imply that housing officers and deans and physical planners need henceforth live in fear of being locked into — or out of — their offices by mobs of angry students, or of having the student union "liberated," or of having "stink bombs" tossed into the dining hall — though it's quite possible such incidents may occure here and there.

Rather, I mean to suggest that college teachers and officials at all levels — and for that matter, all us over 30 — must recognize that we are dealing now — and will deal all the more in the near future — with a new kind of student population, with young people who (leaving the extremist fringe aside) are sophisticated, informed, responsible, and serious to an extent that I as an alumna of the so-called "silent generation" of the 50s find awesome

and even a little sad. (When I was in college our idea of fun was raising hell in Fort Lauderdale at Easter, not going to jail in Selma in July.)

And I mean also to suggest that the fast-changing attitudes and expectations on the part of the consumers of higher learning combined with the general ferment in higher education, as a whole, demand a thorough re-examination of our academic institutions in all their aspects, including the extra-academic. What this means in terms of housing, I think, is precisely what motivated Virginia Tech to hold this symposium in the first place: the felt need to think through, as freshly and with as little resort to the conventional wisdom as possible, the basic issues in student housing — the why as well as the what and how.

A few years ago, I ran across a statement about universities in one of the British architectural journals which I squirreled away in the back of my mind because it seemed to me to cut through not only all the usual stereotypes but also much of the rather heavy-handed scholarly *sturm und drang* we read nowadays about the uses of the university, the crisis in academia, and so forth. (And also, of course, because I was pretty sure I'd someday find occasion to plagiarize it.)

The statement, in effect, was that the role of the university in the 20th century is not, for all its added complexity, essentially different from the role of the university in the 14th century, or in the 17th century, or in any century between. "The first function of a university," said the editors of *Architectural Review,"* is to create a student body, and the second is to make an environment in which it can flourish."

The first and hardest question confronting any college concerned with student housing is precisely why it is concerned with it at all. The question is too rarely asked in any serious way, and if it is, the answer too rarely gets beyond: "We're concerned because we're concerned; we have housing because we have housing" — or worse, "we should have housing because other colleges have housing." But the

question is a serious one, deserving a serious answer, for it goes back to the root function of creating a student body and a meaningful environment for it. I submit that it is extremely difficult to decide *how* to do anything without first thinking about *why* you're doing it.

The very earliest American colleges housed students because they modeled themselves deliberately and directly on Oxford and Cambridge, which required students to live in, and because, in the "Oxbridge" tradition, they hoped through exposing students to the presumably benign influence of older scholars to shape their characters while furnishing their minds.

For a variety of reasons, this Old World ideal did not fare particularly well amid the rude realities of the Colonial colleges, and in the next great wave of college building was largely abandoned. The new colleges were for the most part regional, established to bring higher education to the young people where they were, without the expense of shipping them off to the established institutions in the East. Most of them provided little, if any, housing because it was not needed; the few students who came from prohibitive distances could find room and board in the vicinity.

When around the beginning of the 20th century, colleges and universities again began to concern themselves with housing, they did so primarily out of recognition that they could not really rely on all their prospective students to live in comfortable commuting range — particularly in the day of the horse and buggy — nor could they rely on the local householders to provide an adequate supply of acceptable accommodations at reasonable rentals. In short, they added housing because they could not otherwise fulfill their fundamental educational mission of making higher education more readily *accessible* to the broad range of young people they were pledged to serve.

Once the housing was there, for whatever pragmatic purpose, there began a slow and sometimes reluctant return to the early aborted proposition that

since where a student lives affects how he learns and what he becomes, housing can and should play an active rather than merely a permissive role in the educational process.

In my opinion, however, the principal function of campus housing — at least at the publicly supported institutions where most of the students are now and where an estimated 80 per cent will be by the end of the century — is still to provide access to education, and that its educational function is more often wishful thinking than fact, except in the sense tha youngsters are apt to learn a great deal more of importance through living with their peers than through listening to lecturing from professors.

The "why" of housing, then, may be to provide access to education, or to serve as its agent, or to do the one for some students and the other for others, or to do both. The point is to achieve enough clarity of purpose to avoid the schizophrenia that now exists in most college housing systems with much lip service being paid to "integrating living and learning," and "contributing to the development of the individual," and similar high purposes while the residences themselves, and the way they are run, do nothing of the kind.

Should a college decide, in the light of its overall educational goals and the resources available to carry them out, that for it the most sensible approach to the question of student housing is simply to provide — or casue to be provided — decent and inexpensive quarters where students can live and work within easy reach — not only of classroom, library, and laboratory; but of such cultural and social resources as the college chooses to make available — well and good. But such a decision carries with it quite definite physical implications which go beyond the planning of the housing as such and affect the total shape and character of the campus environment.

Should the college decide, on the other hand, to conceive both housing and education more broadly, and to fuse with housing some of the functions more usually assumed by other segments of the institution,

that too is well and good. (Some would argue that it is a great deal better.) But the decision again carries physical implications no less definite and far-reaching — but quite different.

All of which, I suppose, amounts to pointing out the obvious: no goal can be met unless it is set.

Yet, this rethinking of the basic purposes of campus housing is essential, in part because colleges by and large are so obviously not fulfilling their ostensible aims, and in part because there is reason to question whether the aims so often professed in catalog prose an entirely consonant with the realities of either today's institutions or today's students.

At this point, of course, when a college has established to its own satisfaction whether and why its educational business requires that it also pursue the housing business, the going gets sticky. For it is a long step from purpose to planning, from why to how, and there are several orders of reality which must be dealt with.

High on the agenda, though, should be a close look at the students to be served — not just today's, and certainly not yesterday's (which I suspect happens all too often as planners succumb to the quite human temptation to project back to their own student days), but tomorrow's as well. And also high on the agenda should be a close look at how students are now being served, and why campus residence halls are so clearly so unsatisfactory for so many of them.

In my opinion, any college that builds in the late 60s the kind of student residence conjured up by the word "dorm" will live to regret it long before the mortgage is paid off. This is not to suggest that all that expensive real estate should be abandoned. The glorified barracks with its double rooms and double-loaded corridors and gang baths and so on actually seem to work fairly well for some students — particularly new students, transfers from two-year colleges as well as freshmen, who want to get their bearings and casually meet a lot of people before being locked into any more tightly structured social group. Or at least they could work well if something could be done about the generally poor

study conditions — the noise, the lack of privacy, the inadequate desk and shelf space. They might even be made to work fairly well for more seasoned students, for example, if those 12' by 15' rooms into which we now squeeze two people and all their belongings could be converted to relatively commodious studios for one.

Be that as it may, almost all colleges have an abundance, if not a plethora, of such housing, and must and will use it simply because it is there. What they don't have to do is build more of the same. What is needed instead is the invention of new housing forms which will satisfy the needs of the upperclassmen, the graduate students, the married students, and for that matter the more mature students of any age, who are not now well served by campus housing and therefore hie themselves off campus as fast as the parietal rules allow them. And this is particularly important in view of the fact that for a number of reasons, including the spread of community colleges, such students are coming to be an increasingly large proportion of the total student population. (I understand that Virginia Tech, for example, anticipates that within the next few years, some 70 per cent of its enrollment will be upperclassmen.)

Nor need the invention of more suitable housing forms for these students pose any monumental planning problems, though it will require thought, and perhaps a willingness to jettison some long-cherished notions about both students and housing. Common sense and simple observation will go a long way toward indicating what is wrong with existing housing — which is the first step toward extrapolating to what might be right — and there is even developing a quite respectable body of more or less formal research on the subject.

Probably the best-known and broadest-gauged is the work done by Sim Van der Ryn and his colleagues out at Berkeley, which is essentially "student watching," — though a variety of techniques were used — based on the classic anthropological assumption that if you want to find out how an environment affects the living and work patterns of its inhabitants, you beard the natives in their natural habitat and observe what they do there — when, where, and, if possible, why.

You can also ask them directly, though the survey/questionnaire/interview technique is limited by the fact that while students can be highly vocal about what they don't like, they generally haven't enough breadth of background or experience to be adequately explicit about what they'd like instead.

And it might be enormously interesting to apply to the question of student housing some of the techniques and principles which fall into the catch-all category of "advocacy planning," now being applied to the development of other types of public housing and community facilities.

In any event, the problem of isolating the characteristics which might constitute better student living conditions is greatly simplified by the fact that students, seen close up, are not after all so very different from you and me. Their needs and wants — and likes and dislikes — are pretty much what any of us look for in a place to live, the principal complicating factor being that although they are "employed" at actual course work, they are also "free lancers" and "moonlighters." That is, they do a great deal of their work at home and they tend to have irregular and quite diverse work schedules. These peculiarities of their trade, of course, have to be accommodated in their living arrangements. But otherwise their housing requirements are not only reasonable but modest by the standards of the outside world. They want, for example, to live in a residence and not an institution. They want to feel a sense of community, and to be able to find companionship when they want it — but they also want to feel a sense of their own private identity and not to have to live always in someone else's pocket. They want a place convenient to their work. They don't want to pay more for it than they can afford. They want to be able to eat when they're hungry. They want to be able to do their laundry in the middle of the night if that's the only time they have

to do it or if the spirit so moves them. They want to be able to entertain and socialize with whomever they choose, whenever they please, within reasonable bounds of good sense and good taste. They want control over their own territory, their room — to arrange their furniture the way they want it instead of submitting to some designer's canned notion of efficiency, to hang their own Breughel print or Bogart poster and damn the walls, to make their only personal space on campus a truly personal space. In short, they want to live in a way that makes it possible for them to do precisely what we keep telling them they are in college to do: to get an education or learn a trade, yes, but also to taste new experiences, to express newly discovered facets of themselves, to grow socially and emotionally as well as intellectually — and so to emerge a grown-up.

This obviously is over-simplified, if only because students are a diverse lot already and becoming more so all the time. The aspects of his living arrangements which a student deems of primary importance will vary greatly from individual to individual, and equally greatly in the same individual over time. The kid who as an entering freshmen thinks a double room on a hall with 100 other guys in a building with 500 others, not to mention the 500 girls in the building on the other side of the dining hall, is just groovy, is not likely to be very enthusiastic about similar quarters when he's a graduate student sweating out his thesis. And there are many students who view such an arrangement with loathing from the moment they first set foot on campus.

But the essential parameters — convenience, community, privacy, personal control — are fairly consistent, and can be physically expressed in sufficient variety to ensure even a highly heterogeneous student body a fairly decent chance of a reasonable match. What is important is that this be done — that the search be directed to new housing *forms*, in the plural, instead of to some ideal form which once found will reign forever unchallenged as the best possible housing solution for all of the people all of the time. There's no such thing, and won't be until they start decanting us all out of test tubes.

Moreover, the search even now isn't altogether directionless. Or, rather it is already multi-directed in the sense that, apart from our imperfect but not quite nonexistent understanding of our clientele, we have a smattering of variant approaches here and there which, though also imperfect as yet, give some clues as to what might be possible — and more important, how the several existing possibilities might be improved.

The most obvious alternative to the college dormitory, of course, is privately owned housing off campus. This is not new at all — it is precisely where some 70 per cent of all college students now live, and a surprisingly small proportion of them with their parents. But it is a newly prominent possibility, in part because the entrepeneurs got wind that college enrollments were booming and caught the aroma of money wafting on the breeze, and in part because many colleges saw the interest of private enterprise in student housing as a way to slough off at least some of a responsibility they were finding increasingly burdensome.

The honeymoon didn't last long for two reasons. First, the private operators didn't do their marketing homework. They simply came in and built, as close to campus as they could, exactly the same cell blocks the colleges were building, only with carpet and semi-private baths and swimming pools. That is, instead of offering students the choice of a different sort of living pattern, they offered them the old one with frills — which the colleges too were beginning to include about then. Second, the frills were expensive. The developer, unlike the college, had to buy land, borrow money at commercial rates, pay taxes — and make a profit. Result: shoddy construction, extremely high rentals, and often both. Result: students didn't come flocking in quite the anticipated eager droves, and quite a few speculators got out of the business just as fast, and sometimes considerably poorer, than they went in.

But this unhappy tale by no means eliminates privately developed student housing as a viable possibility. The private sector already dominates the market simply by providing housing in college communities, whether or not the housing is specifically aimed at the college consumer.

Many private dormitories are currently in operation, and happily occupied by that segment of the student population that likes the traditional dormitory life, and wants and can afford to have it with all the fripperies. And there is no reason why the private sector cannot contribute more productively than this if the colleges can devise mechanisms by which they can maintain quality and cost control and still enable the developer to make a fair profit. For example, leaseback arrangements and similar deals whereby the developer builds on college land give the developer a tremendous break in terms both of land costs and taxes — in return for which a college with a sharp business manager and maybe a sharp lawyer ought reasonably to be able to extract from reputable builders competitive housing products which would be good for the students and good for the college, but which the college could not or preferred not to build for itself. Or through joint ventures of various kinds, universities, particularly in urban areas, might act in concert with private enterprise and/or government to expand the total stock of housing in the college vicinity — or at least to exert some influence on the nature of development around the campus fringe.

Another much talked about alternative to the conventional dormitory these days is the on-campus, as opposed to off-campus, apartment, which seems to be the latest metamorphosis of the suite plan, which for an unhappy while there I feared was going to replace the double room on a corridor as the best of all possible student worlds. There is very little experience as yet with apartments for single undergraduates, or graduates for that matter, but the few existing projects deserve watching. They are very popular with students — which is hardly surprising, since apartments are the housing type students generally seek out (if they can't find a real house)

when they kick the dust of the dormitory from their heels.

But they also have advantages from the college's point of view, not the least being that on a per-student basis they are cheaper to build than conventional dormitories, largely because they are self-contained and call for an absolute minimum of support facilities. Further, they are versatile in the sense that they can accommodate groups of single students, or married couples, or both, depending on demand as the makeup of the student body or the supply of other forms of housing shifts. One possible drawback that needs to be closely examined, I think, is one that also applies to suites: they necessarily house very small groups in very close proximity, with relatively few built-in incentives — or excuses — for retreating from the group. When the group is one that has come together voluntarily rather than by administrative fiat, this kind of intimacy can be highly satisfying to a great many students. But to other students, it can be deadly.

For these, perhaps, something much more on the order of a residential hotel is needed: a self-contained single room — a studio apartment really — where the student can sleep, store his belongings, study, entertain, or whatever he wishes in complete freedom — even anonymity if he wants it. A less extreme version of the same basic approach is the hotel form of housing common in Scandinavia, in Germany, and to a lesser extent in England, which retains the self-contained single room, but adds for groups of 20 to 30 occupants — who incidentally are integrated by sex — a kind of farm-house kitchen which doubles as a common room.

I have not touched on the "living-learning concept" which I know is dear to the hearts of many educators because so far as I am able to see the adoption of such an approach does not really require the development of new housing forms in the physical sense of accommodating the *living* function as such. In this solely physical sense, the learning function could be fairly readily incorporated in any basic *housing* pattern. Even in the full-fledged

residential college the academic function is essentially additive in its facility requirements: faculty offices, seminar rooms, library, and so forth. This is all the more true for any less intensive effort at combining the academic with the residential function. (And frankly I think most lesser efforts are mostly chimera: installing a language laboratory in the basement recreation room, or inviting a professor to tea every second Thursday, however worthy in themselves, do not convert a dormitory to a living-learning center.)

If this approach is seriously undertaken, however, it does require the development of new patterns of student life in a sense much broader than the physical, and, in my view, more important.

To return to my original text, having created a student body, the university's next job is to create an environment where it can flourish — and this is a task that goes far beyond the devising of new architectural or even social forms for housing or any other aspects of student life.

As John Gardner says in the same piece I quoted earlier: "The greatest need is for new patterns for the *organization* of student life . . . there must be opportunities for students to work off their idealistic urges in constructive projects — preferably projects of their own devising and under their own management. There must be opportunities for them to exercise emerging capacities for leadership and decision."

In other words, at least according to Gardner, "student power" is not only a valid ambition on the part of students but potentially an enormously valuable asset to the world of higher education. Further, while I firmly believe students should have a voice in governing their universities as a whole, I also believe that the most productive place for them to exercise real control as well as influence is precisely in the extra-academic sectors of the academic community — housing and food service, certainly; the student union, maybe; the bookstore and perhaps even the whole host of other ancillary functions. And I don't mean by "power" two student sears on a 20-man housing committee, or student government in the residence halls. What we should look toward is the kind of organizational structure which prevails in most European countries, and is creeping through Canada via the cooperative movement — where students actually plan, build, own, and operate their own housing and food facilities, working through the elected officials of their unions (which are akin to trade unions) or similar organizations, who in turn draw on professional help where needed for special expertise and day-to-day management, and on a board of advisors which is also selected by the students. Furthermore, from all reports, the students do a remarkably good job of it.
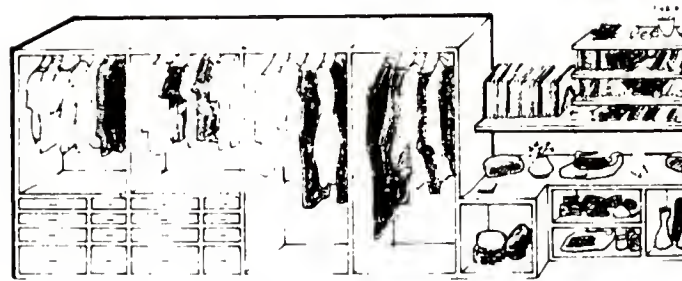
If the Europeans can do it, so can our students — and in fact already are doing it, on a smaller scale, with their co-ops, and fraternities, and eating clubs, and so on.

From the standpoint of planners, students will be inexperienced and probably very demanding clients to be sure. But experienced institutional clients have not been notably successful either at analyzing their own housing problems perceptively or at inspiring their planners to imaginative solutions. Making client and user one and the same by turning more responsibility over to the students might indeed prove a more effective way to arrive at the new housing forms we need and to make better use of the old ones we have.
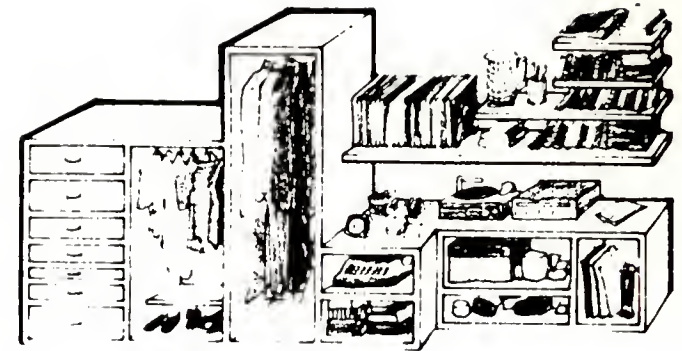
JONATHAN KING

The following illustrations were prepared for the University Residential Building System (URBS) by the University of California with the financial assistance of the Educational Facilities Laboratories, Inc. The University contracted with Building Systems Development, Inc. of San Francisco headed by Ezra Ehrenkrantz to develop the building system. The objective of the URBS is to develop a building system available for student residential construction with highly acceptable environmental quality and adaptablility at moderate costs.
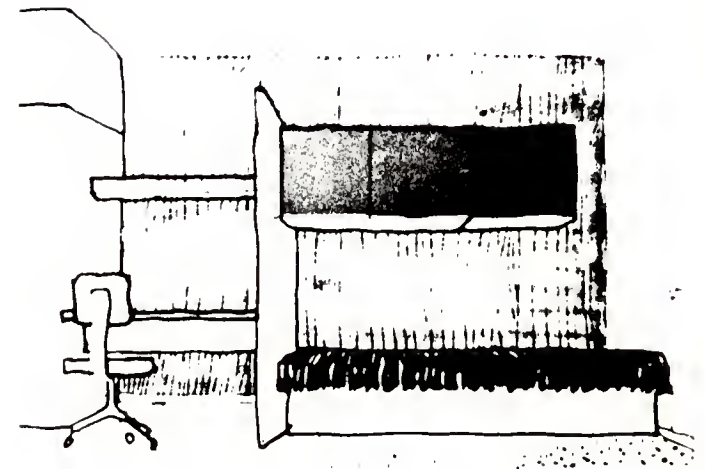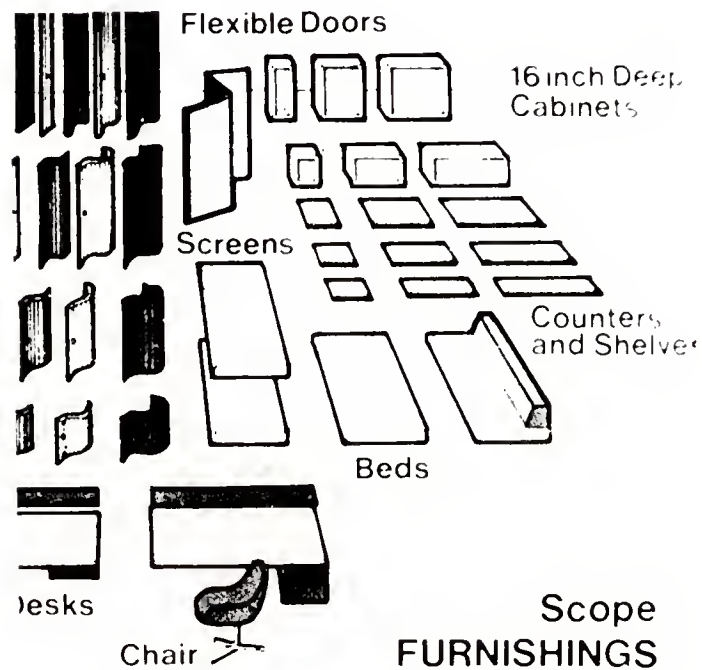
Mr. Jonathan King, Vice President of Educational Facilities Laboratories, Inc. presented and discussed these as a slide illustrated lecture.
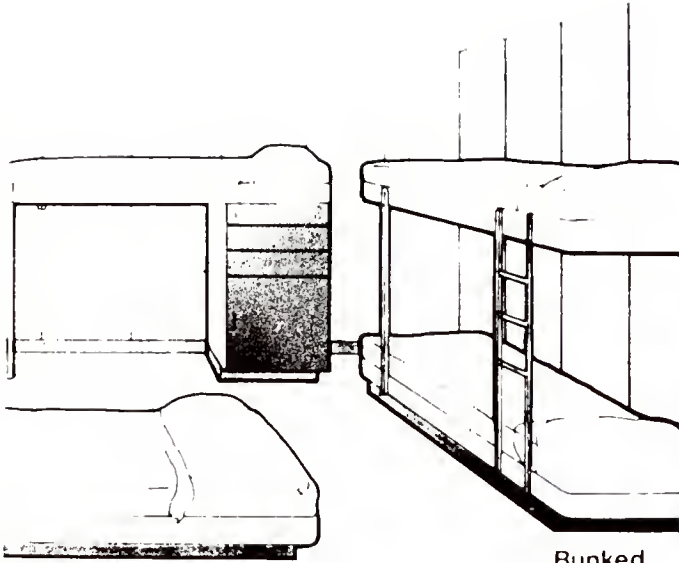
Typical Female
Student Storage Requirements

Typical Male
Student Storage Requirements

Flexible Doors

16 inch Deep
Cabinets

Screens

Counters
and Shelves

Beds

Desks

Chair

Scope
FURNISHINGS

29

Bed

Bunked

Fiberglass
Reinforced
Plastic
Structural Surf

Joint

Tub-Sho

Seat

Closet

Supply Air
to 8 Zones

Hot Water
Chilled Water
and Electrical Lines
from Roof Unit

HVC
MULTIZONE UNIT

Noise
Dust.
Drafts
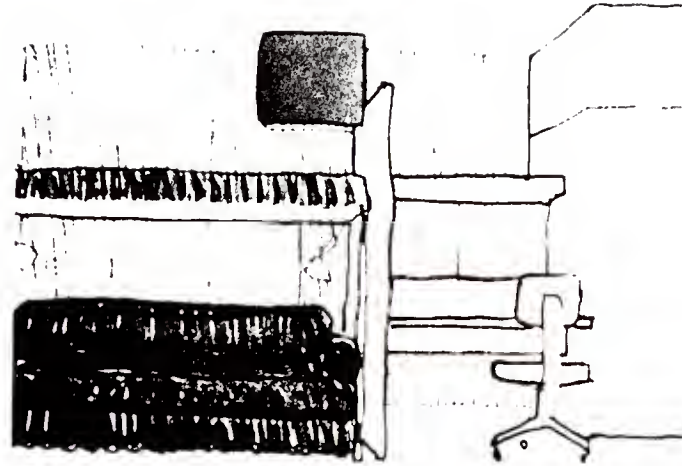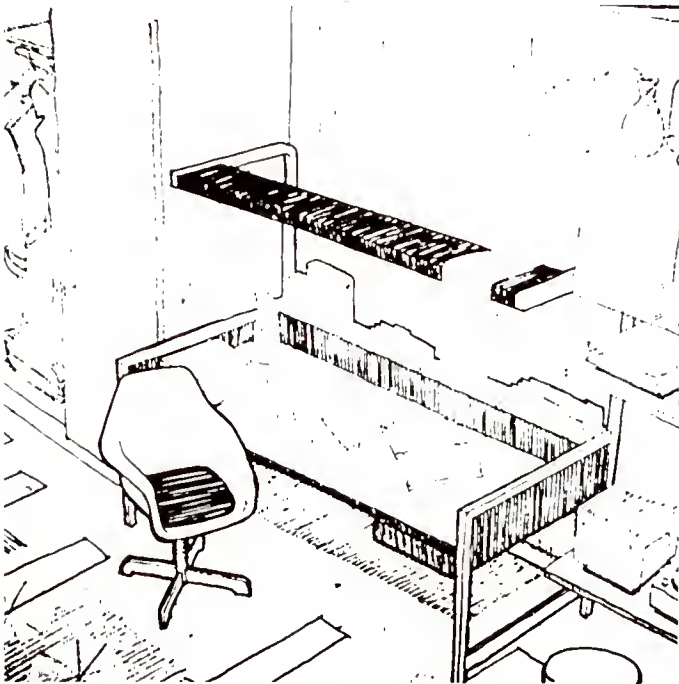
Sound: NC 30
Dust: Filtered Air
Air Movement: 10-45 FPM

31

HAROLD C. RIKER

The question, "Shall we build any more student housing?", has been raised by planning committees and administrators at many universities.

The answer is, "yes", we should build more student housing in the case of those universities which still face housing stortages.

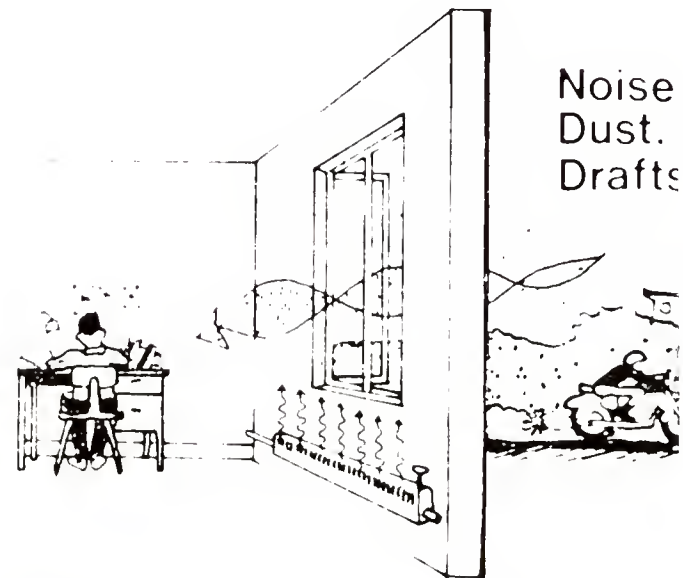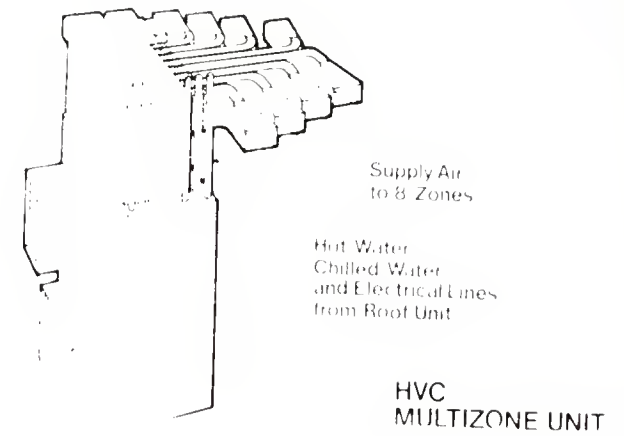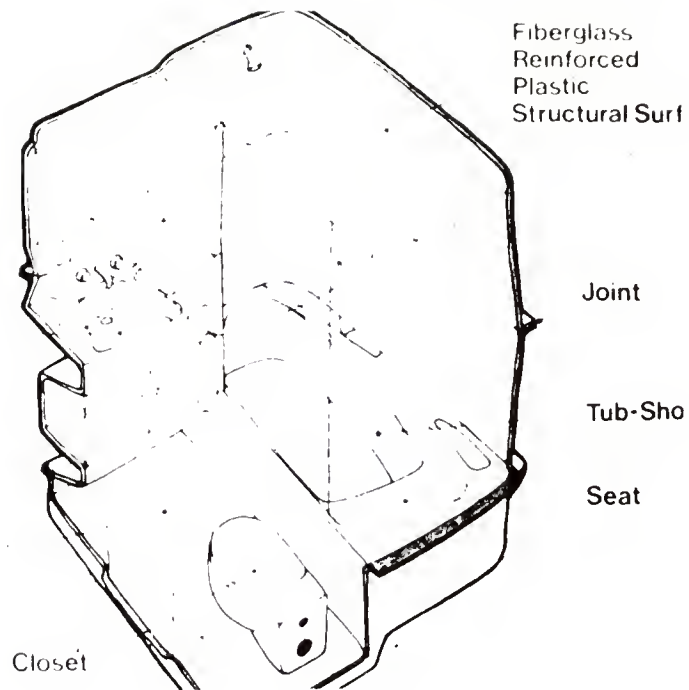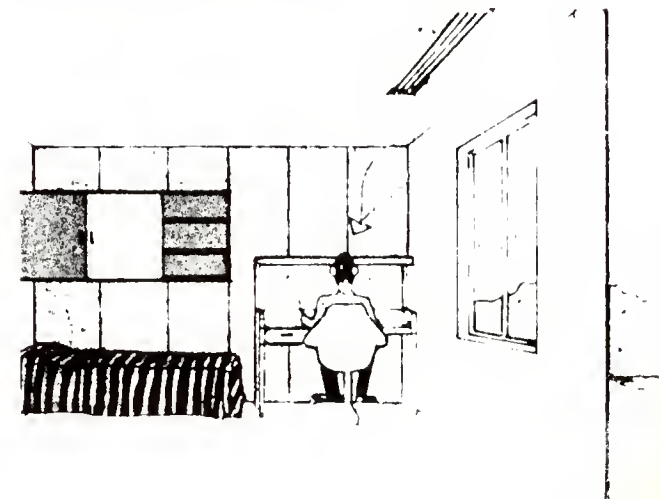The answer is "no", for those universities which accept the line of reasoning that students prefer to live off-campus, that the institution will be relieved of the financial obligations for housing, and consequently, that it can concentrate its resources on its academic program.

But if we analyze these reasons, they may reveal serious implications. For example, these reasons may really mean that the university wants to relieve itself of any responsibility for students except in the classroom; the university interprets its function involving students to be the dissemination of knowledge through various teaching methods, principally the lecture and laboratory and; the university's primary interest in its students — particularly at the undergraduate level — is their minds and intellectual performance. As I was thinking about this question, I wondered if this is a kind of rejection of the student as an individual and a human being by the university.

Look at another aspect of the problem: why do students want to move off-campus? Major reasons include the sense of freedom, which is another way of saying freedom from institutional regulations, many of which are both inappropriate and out-of-date; the sense of privacy, which is a reaction against large crowds, congestion, big impersonal buildings, and the feeling of anonymity; the opportunity to prepare snacks and to cook, the latter on the basis of saving money, which is subject to debate; and the chance to enjoy comfortable living facilities that include air-conditioning, wall-to-wall carpet, a swimming pool, and a place to entertain members of the opposite sex. Not to be overlooked is the off-campus apartment as a status symbol and evidence that the student has reached a certain level of maturity. The move to the off-campus apartment at some institutions also suggests changes in student preferences, particularly at the junior-senior levels; failure of the institution to change to meet new requirements and expectations; and, just possibly, a subtle rejection of the institution, its programs, and its requirements.

The university may be unconsciously in the process of rejecting its undergraduate students while they, in turn, are in the process of rejecting the university. So maybe the question is not: "Shall we build anymore student housing?" It is much more than a question of housing, it is a question of university goals and non-violent change.

I am not suggesting that the university must build all or any of its housing for students. Methods of financing are another matter. I am speculating that administrative decisions to be involved with no more student housing are actually decisions to find the easy solutions and easy way out of dilemmas posed by expanding enrollments, expanding fields of knowledge, and expanding costs.

In my opinion, there is a much more pertinent question to be raised and answered: "Shall the university emphasize teaching or learning?" This is an awkward question of those institutions which emphasize neither, but rather emphasize research.

I can give you a simple illustration of the teaching emphasis. Have you ever noticed that when a student succeeds in his academic work the institution takes the credit for his success? On the other hand, when a student fails, it is the student's fault, not the institution's.

According to Webster, teaching means to impart knowledge so that others may learn. Learning, on the other hand, means to gain knowledge, understanding, skill; and more important, to discover. When the faculty and administrators in higher education begin to concentrate on student learning, we can expect tremendous changes in the approaches to curriculum, teaching methods, and physical facilities including residence halls viewed and utilized as active elements in the learning process. The central theme of Sanford's book, *Why Colleges Fail,* is that they do not treat the student as a whole person or center their activities on him. This theme is repeated by Joseph Katz in his recent book, *No Time for Youth.* If you don't have time for the complete book I suggest you look at the last chapter.

Student personnel staff members need a major reorientation in their points of view toward students. Traditionally, student personnel staff have directed their primary attention to the individual student, helping him to solve his problems. Much more pertinent, I believe, is working with student groups and through these groups with the individual, not so much in the solution of problems, as in individual and group development. Harold Grant of Michigan State University has suggested that personnel staff should form their own SDS, meaning Student Development Services. The key word is development.

I believe that one of the answers to the question: "Shall we emphasize teaching or learning?" is going to lead to a basic reorganization of the university structure. Typical is the description of the major

administrative divisions of the university as academic, student life, and business. Note that the academic program which is traditionally "teaching" is administratively separated from the student life program which is, in effect, "learning."

The possibility is that the student life program will eventually be converted to a student development program and organized as an academic college rather than as an enforcement arm of administrative policies, and therein lies the trouble of student personnel people.

Involved here also is the physical organization of the university, which should reflect the unity rather than the separateness of its parts. If we can make the assumption that the student is the central feature of the university, what building or buildings become the focal points of the campus?

University residence hall concepts are based on and determined by educational concepts, and that educational planning must precede campus planning as well as planning for new residence halls or the renovation of old ones. The major element of the educational planning process include the objective of the university; the programs designed to achieve those objectives, (which means both the formal and informal curriculum — the learning process together with factors influencing this process) and the characteristics of students who will attend the university.

Some colleges and universities no longer attempt to list their objectives in their bulletins or elsewhere — a situation which provides a real challenge for the planners of buildings. In terms of social functions, Katz suggests that the university provide a greater education, an opportunity for socialization and social mobility, some preparation for work — generally in a professional field — à place for boys and girls to meet, and a holding mechanism to keep large numbers of people out of the labor market. Individual development is a goal more often implied than real.

Developing an effective curriculum is indeed a complex matter, rendered more complex by time and the proliferation of specialized courses which often meet the needs of the faculty more than those of the students. I can recall one university president impressing his alumni with the fact that their institution now offers over 3,000 courses. At this same university students are complaining about the similarity of courses and how lacking they are in stimulation. Sanford has commented that: "Educational history may well be made by the first college that reduces the amount of material offered in its curriculum in order to give the faculty time to reach the students."

Katz describes major areas of teaching and learning, and urges an expansion of the traditional concept of the faculty to cover these areas better. First is the academic-conceptual area which includes traditional subject matter. Second is the esthetic-artistic area which concerns both external and internal experiences. Third is the area of people-oriented activities. This area involves working with others — understanding and helping them.

The fifth area relates to machines and other man-made objects. Motoric expression in a sixth area, which is descriptive of the wide range of athletic activities, both varsity and intramural. Finally, the seventh area covers teaching and learning in sociability — the art of human relationships.

With this wide variety of subject matter (provided you agree that all of these areas are a proper part of a university curriculum) it becomes obvious that a wider variety of people are to be classified as faculty, engaged in and committed to the processes of teaching and learning. It also becomes more readily apparent that learning is not confined to the classroom or library.

Much has been written about the learning process; there are a number of theories propounded

by prominent educators. For the purpose of our discussion, it is sufficient to say that learning is a total process. It is very personal; what a student learns depends considerably on what he wants to learn and what the subject means to him. To hear an idea is one thing; to explore this idea so that it takes on personal meaning is quite another.

A variety of factors influence learning, in addition to the personal one. Informal and comfortable association with others who have similar interests is a factor related to residence halls, where there are often opportunities for such association. Related to association is the feeling of personal security, the freedom to be oneself. This feeling can be nurtured by a housing staff that is academically oriented and capable of conveying the assurance that they really care.

Readiness of the student is an important factor. He operates as a total organism — a unique living human being with a body and emotions, as well as an intellect at a particular stage of development. All of these elements influence the student's mind and learning, sometimes to the point that he is unable to react intellectually to anything said to him in or out of class. If these roadblocks to learning are of concern to the university, then teacher-counselors are needed to help students in identifying and removing their roadblocks.

Two other points relate residence halls to learning. First, environment influences behavior. This environment is both physical and social.

To illustrate: If study conditions are poor in the student's room, he is less likely to study. In addition, if his living group places a low value on studying, he is even less likely to study, regardless of the physical conditions.

Second, enrichment of the environment can stimulate and enhance intellectual activity. A person who lives in a culturally impoverished environment is likely to be culturally impoverished. I would suggest that the environments of some colleges could be described as culturally deprived — the decor of some student rooms provides specific evidence of the cultural influence of the institution or the lack of it!

All too often, university residence halls provide environments which are negative charges, intellectually and academically — and we wonder why entering students so quickly lose their initial enthusiasm over coming to the university!

Let me suggest another possible reason: Entering students tend to be more ideological than theoretical in their thinking. The university, on the other hand, searches for evidence in the development of theory; it depreciates ideas and, in the process, creates anti-intellectuals.

This reference to the characteristics of students brings me to the last major element of educational planning. If we are developing the curriculum and buildings in the interests of students, we should know what they are like and what their needs are, in educational developmental terms.

The most obvious and perhaps important characteristic of college students is that they are different, one from another. They have differing personalities, abilities, and goals. We might then conclude that the university should provide alternative opportunities for learning and for living. For example some students prefer the lecture method of instruction; others, the informal discussion. Why not give them a choice? Some students like the typical, double-loaded corridor arrangement in their residence halls; others like an apartment where they can cook. Is it possible that we can give students a choice?

Most of our advance evaluations of students are in terms of college board scores and/or high school grades. It might be equally appropriate to know something of their life style.

Students need to have a sense of competence and self-esteem. The social environment in the residence hall is one means for helping to meet these needs.

The Hazen Foundation's report of last year on the new student in higher education presents these additional characteristics: (1) students want to learn — the degree of desire varies, but the desire is very much present when students first come to campus: (2) students are products of a wealthy, complicated, impersonal, and tension-producing society; (3) they are seeking commitments and meaning, but are skeptics, lacking faith in accepted standards; (4) they turn to human relationships as a source of the purpose and image they seek; (5) today's students feel strongly the need to belong but are wary of most of the organizations they encounter, including the university; (6) for all their sophistication, students are often uncertain about themselves and others; (7) this uncertainty causes suspicion and distrust of the administration and, to a certain extent, of the faculty of the university; (8) most students expect that the university will mark the need of their dependence on their parents, and anyone else, for that matter; (9) with all their problems, students have a curiosity and capacity which only await a challenge. Required then are new and vital educational programs to meet students' needs. This description may give us some indication as to why student life on the campus is in an unsatisfactory state.

Today's students are looking within their university for a cause and a hero — and are finding neither on the university campus. As educational planners, our job is to present the intellectual life in such a way — and ways — that it becomes an exciting cause worth pursuing. One of the major ways is through group living. If it is true that attitude and behavior change occur primarily as the result of peer group influence, then these groups are a major instrument of learning.

If it is also true that the major opportunities for change are present during the freshman year, then the academic and residential programs should be organized to take maximum advantage of this period of time.

Some of the new programs invlove the residence halls. These are some of the possibilities:

One of the most influential residence programs, potentially, is student arrangements to rooms and to groups of rooms, together with coordination of the residential and instructional programs. A recent study at one of the California universities indicates a relationship between roommate compatibility and academic performance. Unfortunately, researchers have had little success in identifying factors related to compatibility. The possibility is that intellectual ability and interests are involved.

A number of procedures are now being utilized to coordinate the residential and instructional programs, strengthen a sense of unity in the total college experience, and stimulate team learning.

Honors halls or floors for high-ability students are not new, but they seem to have more meaning for students and gain greater success when associated with the honors program of a particular department of a college, or a particular college of the university.

Special projects at the University of Michigan and University of Florida illustrate another procedure — that of assigning voluntary groups of entering freshmen to the same section of a residence hall and the same section of one or more freshman courses. At the University of Florida the residence counselor also teaches one of these sections. One notable result is a gain in the student's sense of satisfaction with his academic work and greater satisfaction with the university. Here are a few quotes from students at the University of Florida:

"It is just plain nice to go into a class with your friends. It is more informal and you find yourself learning more and looking forward to the class . . . "

"It's nice to have a warm and personal class with your friends, instead of always facing a class of

strange people whom you seldom get to know . . . "

"The teacher and students can communicate more easily when they know each other . . . "

Faculty members participating in this project have been impressed, too. Said the head of the logic department, "These are the best classes I've ever had." The fact that one class gave him an appreciation present at the end of the year may have helped to impress him!

One of the teachers-counselors commented:

Occasionally I would drop into the living area meaning to stay only a brief time to see how things were going. I never left under four hours. Men students seem to be anxious to have someone to talk to about personal matters, adjustment problems or just about anything in general. A point that has become so obvious to me is that the average students, whom by and large are ignored in the vast sea of the university college, can be effectively reached by a teacher-counselor within the residence halls. This person who represents the faculty on the one hand and by the nature of his counselor training on the orher, can become a trusted person to help individual students find meaning not only in their academic pursuits but also in their personal and social growth at the university. In short, the teacher-counselor can become an effective academic role model.

Living-Learning Centers at Michigan State University provide for certain courses to be taught in residence halls designed with some classrooms and faculty offices. The Stephens College house plan concentrates team teaching and team living in a small-size residence hall.

On larger scales, the cluster college and resi-dential college concepts both strive for small group living and close associations between students and faculty. Three problems seem to be common: finding faculty who are really interested and capable of handling the intensive teaching requirements, developing an organization that can substitute for the traditional department or compete with it and, creating acceptable administrative patterns to co-ordinate the residential and instructional functions.

Coeducational residence halls have been mentioned. I think they are a very important part of the development in the student housing area. Their advantages include improved programs, improved attitudes, and improved morale. Men and women get to see each other in a variety of roles and develop

feelings of respect and appreciation. An experimental college is planned on the Davis campus of the University of California, I understand, starting next year. Project 10 at the University of Massachusetts apparently is going to involve older students teaching

younger students in a type of residential college. The College at Old Westbury, part of the State University of New York system includes a new kind of curriculum, group activities, and social services experiences. I'm not sure about the Stanford experimental programs described as "co-educational fraternities organized around academic topics."

A second type of residential program is the development of "informal classes" or scheduled discussion group meetings in the residence halls — the initiative for such meetings may come from students or faculty. The development of free universities illustrates the type of meeting which can logically occur within the structure of the university.

The "informal class" is also a substitute for some present unenforcable conduct regulations. For example, rules against drinking and the use of drugs are less likely to influence student conduct in those

matters than are discussion groups investigating causes, results, and cures. Rules attempting to regulate behavior with the opposite sex are ineffective substitutes for classes on such topics as sexual behavior, male-female relationships, courtship, and marriage. Personal values are of tremendous concern to students, who need more assistance than is provided by the impromptu bull session. Residence halls have long been described as laboratories for experience in human relationships; they should be so used and regarded as extensions of the formal curriculum.

A third type of residence program might be described as creating and maintaining compatible environments. These would be compatible in two ways. First, in the sense of relating the living and learning experiences of students, visual aids are one effective means in developing an environmental form — they should be used campus-wide. They can serve to reinforce classroom learning through a repetition of subject matter in displays arranged for both residential and instructional buildings — student rooms should be viewed as a living-study center, compatible with the university's instructional views. In the future, equipment may well be used to institute a closed-circuit television system which would include electronic devices for information retrieval and telephone connections to a programmed instruction center.

The compatible residential environment also means that it is consistent with student purposes and behavior patterns. For example, social and recreational activities may be planned in advance or spontaneous. In the latter case, organizational policies and procedures must be sufficiently flexible to accommodate this. In short, the residential environment should be responsive to students. The active participation of student government in the day-to-day activities of the residence halls is an important example of the compatible environment

which says to students, "We trust you." The real key to compatible environments is similar objectives for the residential and instructional programs with some of the same qualified people participating in each.

Effective residential programs need effective and qualified staff. It is in the area of staffing patterns that residence halls may change dramatically in the years ahead. A new kind of professional educator will serve as a teacher-counselor assigned to a residence under a joint appointment by the appropriate academic department and housing department. He will be concerned with student learning, will teach one or two classes, and serve as a counselor for students within his residence halls. This teacher-counselor will be assisted by full-time faculty, full-time counselors, and students.

The students will also be teachers for younger students, often on a volunteer basis. For example, a sophomore man and woman might be assigned as volunteer leaders for a group of freshmen — four men and four women — with each leader living in proximity to his assigned freshmen. This arrangement combines the advantages of small groups, co-educational activity, and the experiences of older students. This procedure may well be employed in the future as a new teaching method — an effective way to stimulate learning.

We have been thinking about educational planning and residence hall concepts. We've been suggesting that planning for the curriculum and teaching methods is intrinsic to planning for residence halls. Yet this kind of planning is seldom possible because of the lack of long-range planning in the areas of curriculum and teaching methods. When total planning becomes a reality, the inter-relationship among curriculum, teaching, and physical facilities will become obvious and the results should produce a powerful operating unity.

But there are two underlying problems to be resolved: The first is commitment on the part of

administrators and faculty. The second is a genuine willingness to experiment and to consider major change. Our investigation of the major residential college experiments in the country has concluded that their present problem is lack of political power in the institutional hierarchy. Other experiments rest entirely on the enthusiasm and personality of one person. When he leaves, the experiment collapses. There is yet quite massive resistance to changes in the institutional power structure. Perhaps students will work to do what no one else has been able to do in this regard.

Today, hints of change are laboring across university campuses, with varying intensities. And change will occur. How much better if change can be wisely anticipated and planned for, so that our efforts will be utilized in the most constructive ways, rather than in trying to pick up the pieces when existing higher conventional structuring collapses because of weaknesses working from within.

With specific reference to Campus Plan II, I favor:

Establishing residence areas for lower division students and separate areas for upper division students. In my opinion, the facilities and the programs should be different and the move from one to the other type of facility should be symbolic of individual progress toward maturity, but for all undergraduates there should be educational opportunities wherein instructional and residential programs are coordinated and combined.

Housing facilities should have variety, so that students have choices. The facilities — both old and new — should be attractive.

If the population includes more transfer students, particular attention should be given to special programs for them, including orientation to the new university.

In any event, if all of us do our educational planning well, I would suspect we will be developing

and utilizing our residence facilities as never before.

WILLIAM F. SHEPARD

I think back to 1955 when we had the Kerr's Great Panty Raid of $10,000 damage, and we thought we had real trouble then. I have never seen Clark Kerr as angry, before or since, as when that occurred. But little did we know what the future would hold for us and higher education there and throughout the nation.

Now, my principal interest is to rebut the devastating remarks of Jonathan King. So, I shall start with this statement, "Ladies, Gentlemen, Architects, and Jonathan King. I bring you greetings from the state of California, the Golden West, the birthplace of our newly inaugurated president, who at his inaugural address spoke for only 17 minutes." I shall hope to speak for no more than 17 minutes, because Hal Riker told me he needed two hours of the time allotted.

I bring you, too, greetings from the University of California with its more than 100,000 docile, tranquil, obedient students who unswervingly follow the dictates of the university, the state, and the national administrations, never mouthing a word of concern about our society. I am able to be here today because we have had relatively little trouble with our students since the last two sit-ins in October when only 150 of the 100,000 students were arrested for trespassing and related violations. Incidently, none of these was from a residence hall, or co-op, or a

fraternity or sorority.

Just before my departure from California, some 400 students consulted the governor and his fellow regents by chanting "the word" — a word formally *forint academe* and restricted to barracks phonicular.

On another campus two students were murdered. A truly tragic situation. The last time I came East to talk, that time at the University of Buffalo, the filthy speech movement broke out on my return. Heavens knows what will occur when I get back to California this time. It will certainly not be an alarm over the filthy speech movement, for "the word" uttered a few years ago which resulted in dismissal of four students, seemingly is a necessary part of the vocabulary of one of the subcultures of our student society.

I deeply appreciate your having invited me here to meet with you. I shall do my very best to give you my views on the topic suggested, "Student Attitudes, Needs, and Desires" and try to relate the academic environment to the in-house living program.

I believe as Jim Dean has stated that I am qualified to speak on student attitudes, needs, and desires because I have served quite a few years as dean of men and dean of students on the Berkeley campus, of which you have heard, leaving just before the great debacle of 1964, which was an *en suite* decision on my part. But I more importantly am qualified to discuss student attitudes, needs, and desires because I have long been a student of the French Revolution, and I once wrote a book on the Reign of Terror.

Thirdly, I am qualified to speak on this subject because up until 1964 we made every mistake one could possibly make in a residence halls program.

As a way of introduction to the topic, I would like to tell you the story of an Indian chief in Colorado, who in mid-winter after surveying the wigwams and the food caches brought his tribe together and said: "I have good news for you and bad news. I'll give you the bad news first, this winter we only have buffalo chips to eat; but the good news is that we have an abundance of buffalo chips."

I am going to give you the bad news first: When I called my office yesterday (and this has become sort of a saying in our office, "Let's take the buffalo chips first!") my associate asked me if I wanted to get the buffalo chips along with the good news. He told me one of our principal lecture halls had been burned out as a result of arson. I don't know how much further we can go in this line. The next thing, if you want to stop a university, is to seize the computer center. That's been done once on one of our campuses, but the real way to stop a university is to burn the library.

The title of my speech is not taken from Genesis or Isaiah, nor is it taken from the *Talmud* or the *Koran*, nor is it taken from Lee or Grant; it's taken from last year's minutes of the Committee on Living-Learning for this university, Virginia Tech. The title is, "A Place To Sleep, Eat, and To Put One's Possessions and Person Away Without Interference."

I think this is a beautiful statement of what most of our students really wish in residence. Nevertheless, I shall try to relate this beautiful concept to student programs and the total university environment. I am reluctant to do this because I think the Committee on Living-Learning has already provided the answer.

About 15 years ago, someone discovered that the private dwellings around the University of California at Berkeley campus where students lived were rapidly deteriorating and becoming slums, and that same person knew that if enrollment were to increase by 10,000 there should be spaces for students to live in. At almost the identical moment the thesis was advanced and accepted that it would not necessarily be communistic and probably not even socialistic were the university to build residence halls. Being sensitive individuals, those planners decided to ask students what they would like to see in a residence hall. It would do no good to talk to a person who had never lived in a residence hall, and since no one had lived in a residence hall, the best thing was to talk to students who lived in something like a residence hall.

It was then possible to talk to students who

lived in apartments, those who lived in co-operatives, those who lived in fraternities, and those who lived in sororities. But the apartment dwellers were possibly immoral or at least normal. Co-operative students were independent thinkers, besides being socialistic, and facilities were badly kept. The fraternity houses, while prestigious, were badly kept as the co-op. The boarding houses were miserable failures. Thus the people talked with the actives, alumnae, and house mothers of the sororities. After making this exhausting, indigenous study, our people went to universities — other universities — and talked to the operators there who also had gained their concepts of residences by talking with actives, alumnae, and house mothers of sororities. To be sure, our plan was talked over with more than this group, but very few more. Now with this wealth of information at hand, our planners began to construct the most god-awful series of insults to human desires and humane living. Before we could stop them in 1964, they had constructed 10,000 identical spaces up and down the state. All built after the fraternity-sorority type of living, forcing upon the inhabitants program identical to those in the Greek world. Double-loaded or railroad corridors echoing sound; sterile, identical rooms; identical furnishing even to the bed spreads; two students in every room; huge, expensive lounges which were never used; study areas in the noisest part of the hall. And to these were added genteel housemothers with no intellectual leadership, forced social dues, and attendance at student government meetings. As I stated we soon had 10,000 spaces in such an environment.

Jonathan King's remarks are absolutely accurate. It was not long before students began to complain. Their mildest complaint was: "But you are doing too much for us." I believe this is properly translated as: "But you are doing too much to us." O yes, we built huge and expensive dining rooms where all students would be served at one sitting and where the house mothers could preside at each meal in regal splendor. This really rankled the students. The more they began to complain, the more the bureauracy was convinced that what was being done for the students was good for the students.

Now we must admit that the residence halls were good because the architects won prizes for their unbelievable accommodations. And the regents were pleased with them, which is further proof of their goodness. But the majority of the 10,000 students were not. Nevertheless, since the regents were pleased, the architects commended, and the bureauracy determined to help the students enjoy the programs and the rules given them for their benefit, the programs must be excellent. There were, by the way, on one campus 11 pages of rules, including a rule which forbade lighting a candle and another rule which forbade keeping a goldfish.

But there were now costly vacancies in the residence halls. At the same time the co-op had waiting lists and the apartments were filled. The threat of financial disaster brought about change. First, there were meetings of the deans, who blamed the vacancies on the business managers because alledgedly the housekeeping was inadequate and the food too starchy. Then there were meetings of the business managers who blamed the deans because of the multiplicity of rules and forced social programs. There were meetings of the faculty who blamed the deans and the business managers because the programs lacked intellectual stimulation. (There were no meetings of the architects.) Finally, representatives of the deans, the business managers, and the faculty met and blamed the whole thing on the architects. Soon the deans, business managers, faculty, and architects met and blamed the treasurer and the regents. Seriously, however, at this point we all realized that none of us had been blameless. We then did a number of things. We spent several months analyzing every aspect of the program and wrote a thorough report to the regents setting forth the changes in the program which had to be made and suggestions for further building. We concluded that the rules were overly restrictive, the student programs shallow, the house mother supervision unwise, the residence halls wasteful of space and money —

operational economies could and would be made, and that administrative streamlining was necessary.

Secondly, we sent representatives of the management, the deans, and certain regents to visit residence facilities here and abroad.

Our final conclusion was that we must offer a variety of residential facilities not identical to the ones we had already constructed. Namely, we needed co-operatives run and owned by the students, apartments for single students, suites, and co-educational living and suggested by Mrs. Farmer earlier. Some members of the bureaucracy had argued that it is not desirable to have young men and women eat together, for whether they knew it or not, they perferred to eat separately. We had to overcome that prejudice. We also concluded that some students, but by no means all, like to have their residences related to their academic pursuits. Thus a development of a college system of Santa Cruz and San Diego modeled after Cambridge and Oxford, and the conversion of some of the older residence halls in the residential colleges. Now these must be real colleges, quite autonomous. I agree with Mrs. Farmer that the occasional lecturer coming in and talking to a few students is superficial and it accomplishes nothing. After all of this travail, our conclusion was insofar as relating academia to the residence hall, that this had to be done on discipline basis — i.e., on the basis of a college — that this would be accepted only by some students, and that we must offer variety and provide flexibility in actual structures. The suggestion of co-educational living requiring only those rules which are absolutely necessary for health and safety was a shock to a lot of people.

Naphtali Knox who is participant in this seminar, then with us and out of Chicago, brought a very rewarding appraisal of fresh view of what should be done. Mr. Knox persuaded the administration to seek the aid of Jonathan King and the Educational Facilities Laboratories. From these consultations came the URBS project which Jonathan mentioned. In my opinion this offers real hope — a very real hope — that residence halls can actually be an enjoyable place to live.

But I must stress the all-important concepts set forth in the minutes of the Committee on Living-Learning — a place to sleep, eat, to put one's possessions and one's person away without interference — is the most important rule.

This is a simple requirement. I only wish that in our planning — in our spending of millions — we could achieve this principle if only for a few.

JOHN C. HARKNESS

As has been indicated by the previous speakers, there is a state of crisis in institutions of higher learning. Students are questioning what they are being taught, and its relevance to the real world as they see it. They are questioning the standards of our generation; from their point of view, double standards. And they are certainly questioning the authority of "the Establishment" to tell them how they should live.

Against this background, the method of housing students on campus should be re-examined, and if possible brought more in line with today's needs.

A dormitory is no longer merely a storage compartment for the nighttime hours. It is involved with a whole range of activities around the clock. A great deal of thought has gone into discussions as to the proper arrangement of these activities. If a dormitory is only a place to "sack out," there is no problem — rooms can be packed in into any convenient package. But if we accept the concept that the dormitory should be an organic sub-unit of the university society, we must answer the questions: "What is the best sub-unit? What is the best number of students to the unit? How should they relate to faculty, to eating facilities, to other social or non-specifically-academic activities?"

Let us look briefly at some examples of

dormitory-men

dining-commons

dormitory
- women

future dormitory

N
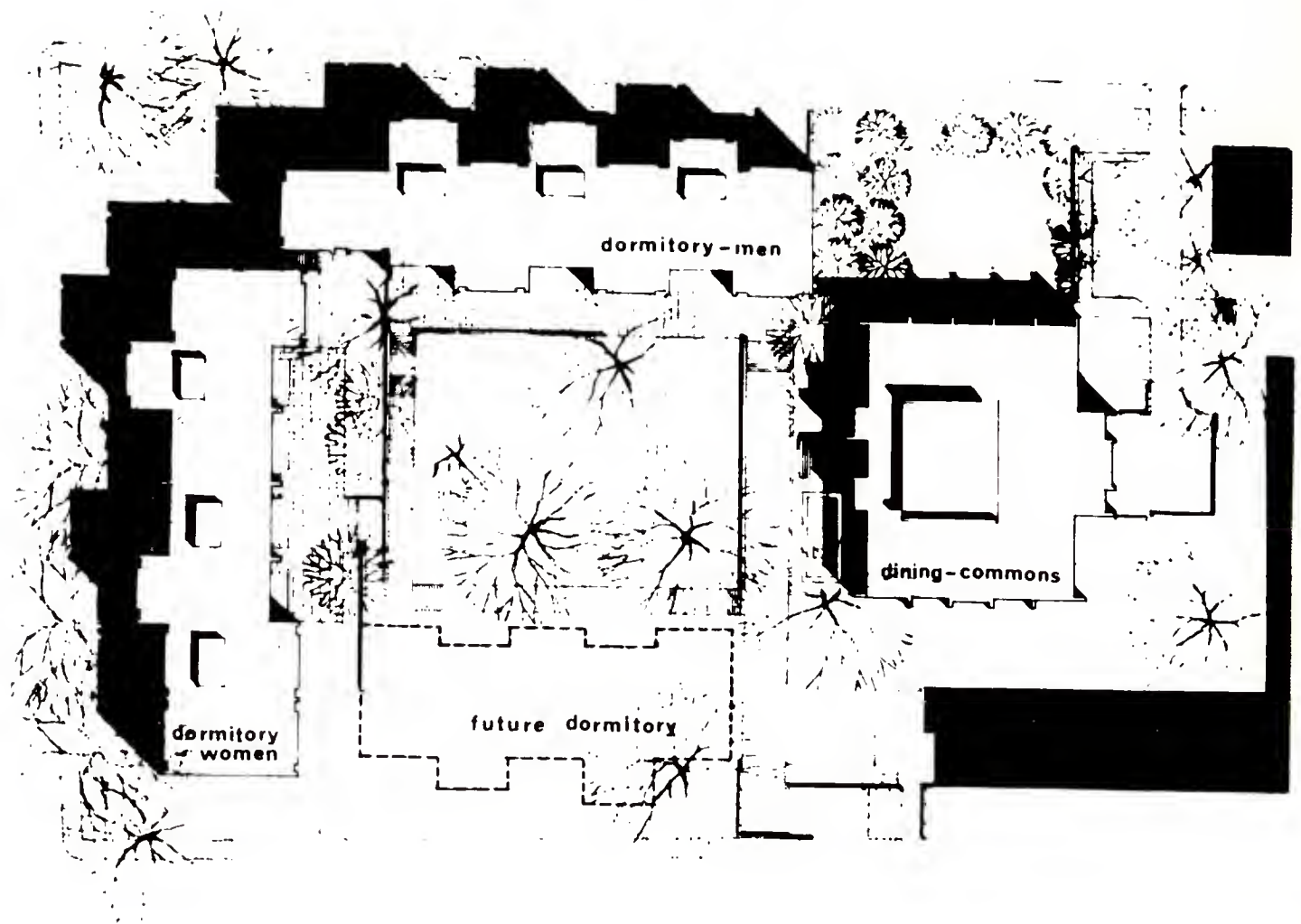
SITE PLAN

0   25   50   100

dormitories which have been built recently.

The new dormitory at Brandeis houses 333 students, men and women. Groups of double rooms reached from separate stair towers relate to common rooms in informal relationship, conditioned to a considerable extent by the relationship to the site. The bearing-wall structure is specifically designed for this solution, as is the built-in furniture. On the one hand, this guarantees a degree of order; yet on the other, precludes some of the flexibility, both present and future (as changing room sizes) which Jonathan King has been pleading for.

The dormitories at Clark University in Worcester, Mass., group six rooms around a lounge, with common rooms at the ground floor. A commons building provides dining facilities and acts as a focal point for the social life for the dormitory group.

Obviously the type of facilities provided affect tremendously the area per student, which is the greatest factor in cost. For example, single rooms require more than doubles. Lounges, study rooms, whether or not dining rooms are provided — all of these affect the result. Thus we see a range from 200 sq. ft. or slightly less, to approximately 350 sq. ft. per student for the newer MIT and Harvard buildings, not including the dining areas. If the dining is added, the area per student becomes approximately 450 sq. ft.

The proposed Virginia Tech women's dormitory for 600 girls has a carefully structured grouping, with 24 girls in 12 double rooms as the basic unit. Each two units has a work room and room for a residential assistant. Each four units, a recreation room and room for a graduate residential assistant. Each 12 units a television room and kitchen. And for all 24 units, various reception and all purpose rooms and an apartment for the head resident. Dining facilities are centralized in larger units for men and women students.

It may be well to point out that dormitories fall into two general organizational patterns, physically: the horizontal corridor-type scheme, and the vertical stair-tower scheme. Each, of course, has many
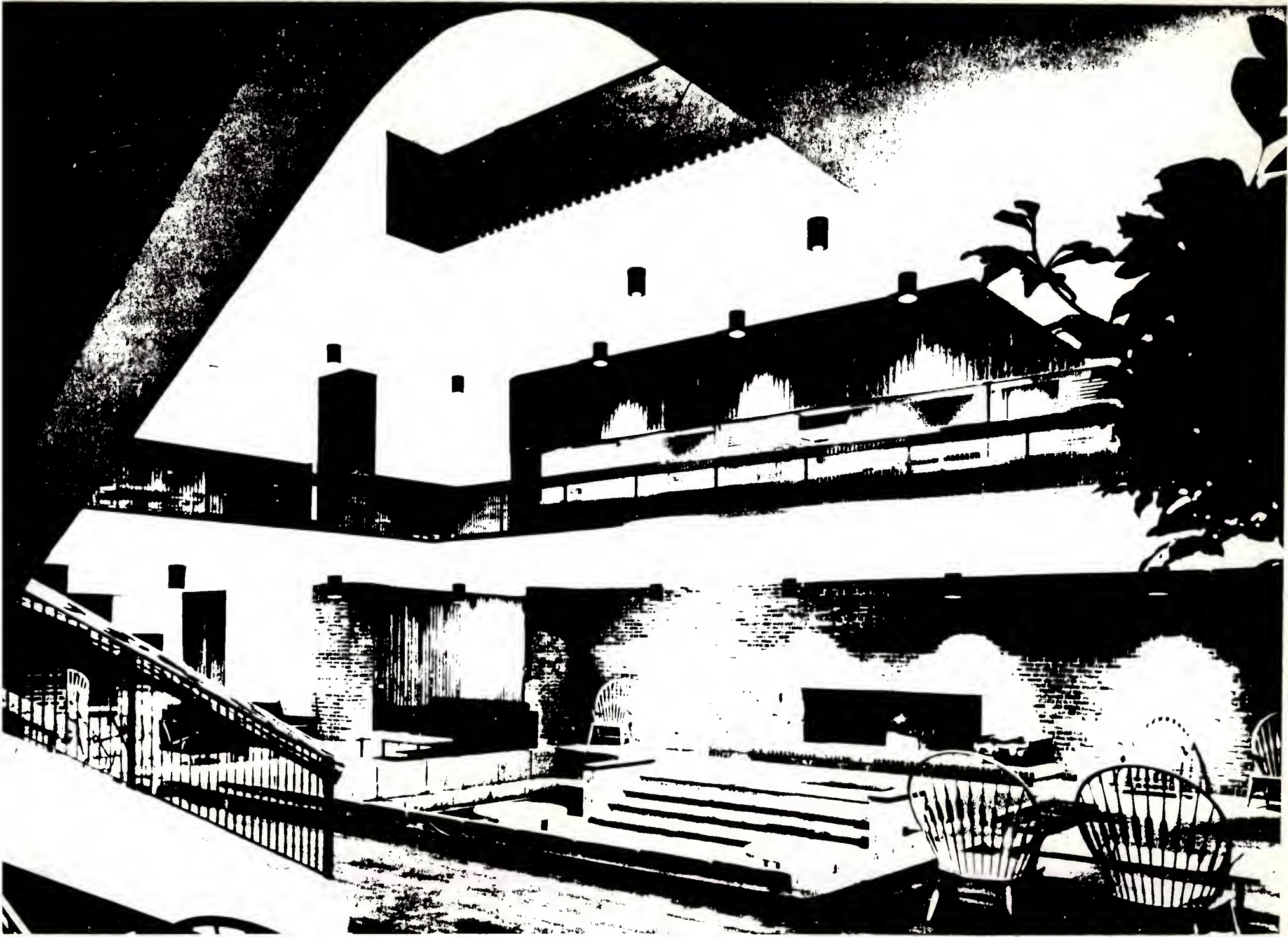
ark University, TAC presentation picture, Dormitory & Dining Commons Quadrangle (Ezra Stroller)

47

MIT student housing from the Charles Rive

Cornell site plan

MASTER PLAN

A CENTRAL AREA
1 LIBRARY
2 ADMINISTRATION
3 FACULTY TOWER
4 AUDITORIUM
5 FACULTY CLUB
6 STUDENT CENTER

B ACADEMIC BUILDINGS

C DORMITORIES

D DINING HALLS

E ATHLETIC FACILITIES
1 ATHLETIC BUILDINGS
2 STADIUM

F SERVICE AREA

G HOUSING
1 PRESIDENTS HOUSE
2 FACULTY HOUSING

H SUPPLEMENTARY BUILDINGS
1 INFIRMARY
2 ELEMENTARY SCHOOL
3 MAIN ENTRANCE GATEHOUSE AND MALL

Bagdad Perspective (5728)

variations and modifications. However, in general, the corridor scheme is very efficient for relatively large groupings of double or single rooms. For smaller room groupings, say six or eight rooms, where each group is provided with a common room around which these may be grouped, the stair-tower scheme is possible. It gets away from the institutional character which almost inevitably results from the corridor scheme, and gives physical expression to the student grouping.

At Harvard University, both types have been used. For example, the Graduate Center built shortly after World War II used the corridor scheme to arrive at a very economical plan, but with essentially no attempt to put the students into groupings. The undergraduate "houses," on the other hand, provide much greater physical amenities in the form of living rooms for each two or three bedrooms, and these are grouped around stair towers. More recent plans have used large groupings to achieve greater economy, but still using the stair or entry plan.

A word might be said about remodeling. In a study made a few years ago to analyze how students' rooms are used, and thus determine their needs, sketches were developed and remodeling solutions worked out. Following these general principles, Harvard has remodeled most of the old dormitories in the Yard.

What should be the relationship of the dormitory group to the university as a whole? Historically, the older dormitories were often built near the center of the campus, since the campus itself was small. As the university grew, often large living complexes were developed at the edge of the campus, as, for example, at Cornell.

In the case of a college or university built or planned all at one time, those relationships may be more carefully worked out. At the Air Force Academy we have an example where the dormitory life is a very specific part of the training process — strictly regimented — and the plan reflects this exactly. At the other extreme, the University of Baghdad also planned as a total

V.P.I. Plot Plan

king

king   lecture   shopping   student street   classrooms   library
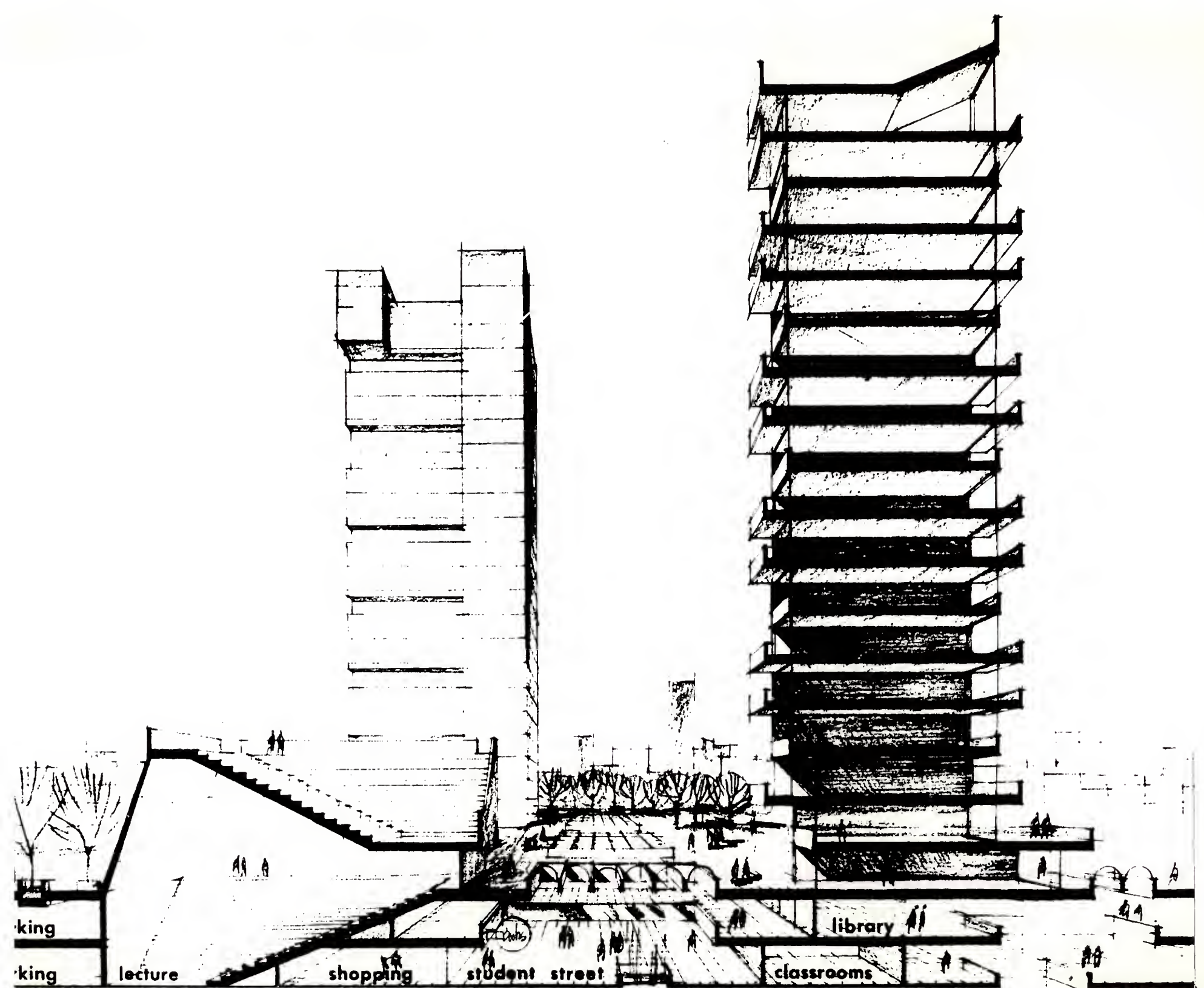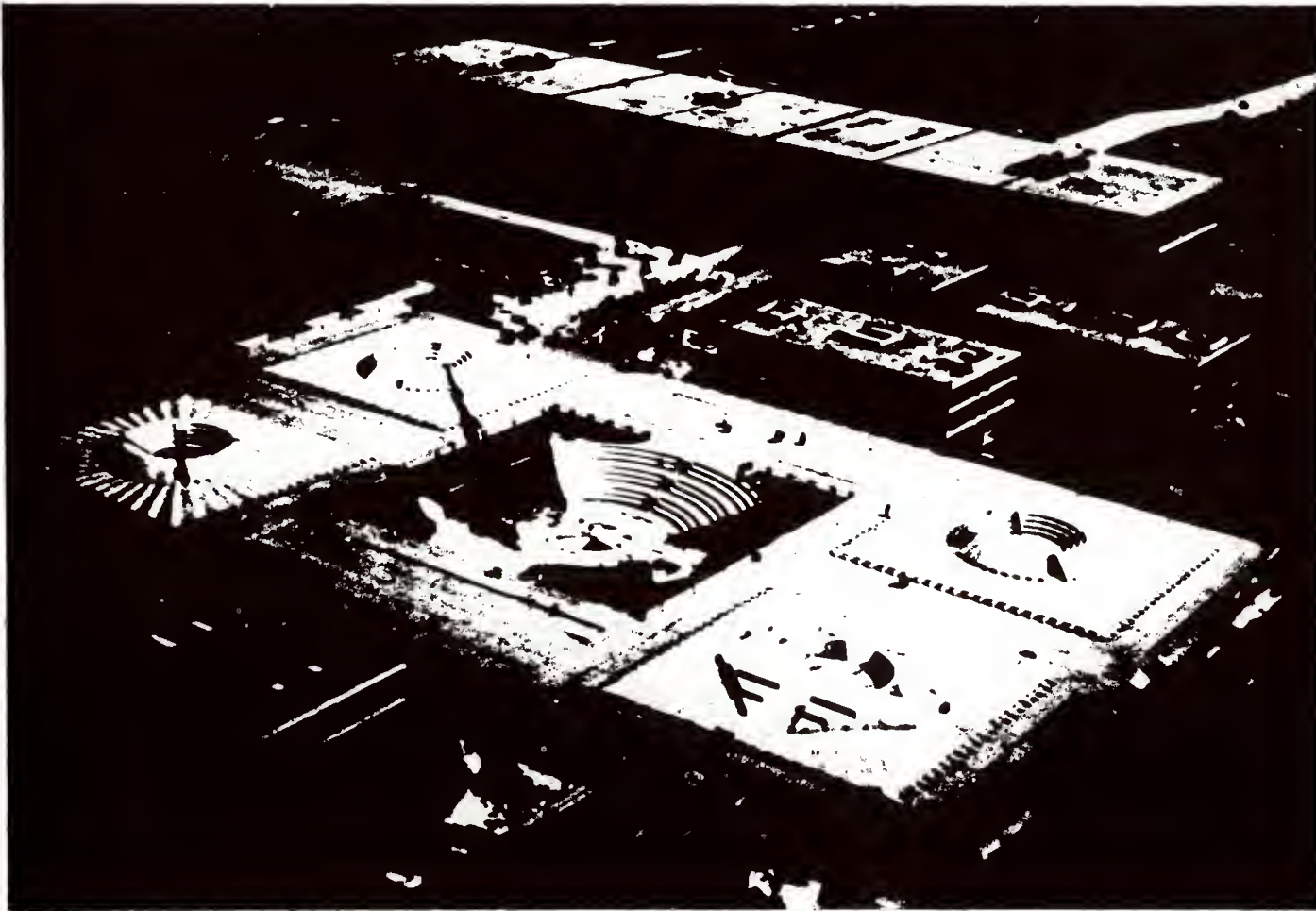
University of Chicago Circle Campus

arvard Married Students Housing by Sert,
ackson & Gourley from the Charles River

university, attempts to achieve in its dormitory grouping the quality of life of the Middle East — crowded for shade and protection from the sun and vibrant with life.

However, if the university is very large, for example with 20,000 students or more, and if a large portion of these are housed on campus, the walking distances from living quarters to classes become excessive. This has led to the concept of the living-learning sub-unit. It allows a grouping of students at a scale which can form a social focus as well as saving time for everyone getting from dormitory to class. This is particularly valid for the first two years of a college curriculum, before students get into specialized fields of study which require special facilities and provide their own groupings. The Virginia Tech campus is moving in this direction.

The urban university has its own special problems relating to maximum use of restricted sites. Dormitories can be very well developed as vertical tower elements, using a minimum of ground space. Classrooms, on the other hand, are better handled in broad-based structures, easily accessible to masses of students during the few minutes between classes. Also, dormitories need light and air; classrooms may be lighted and ventilated artificially. This suggests a horizontal zoning of functions. It allows use of the dormitory room for study between classes because of quick access by elevator from the academic area.

While I do not know of any buildings which have been built using this arrangement, various of the elements have been. The Chicago Circle campus of the University of Illinois has developed the classroom pad.

At Childrens Hospital Medical Center in Boston, a pad level has also been built, housing medical facilities at the center of the plan, and at the more distant section ancillary facilities, commercial and parking. Rising from this base are various towers, patient-oriented at the inner area, and apartment towers at the outer area. The top of this base is developed for a variety of functions on a plaza — including a swimming pool near the apartments. Obviously, this is not a university, but does, I think, suggest solutions for the urban campus.

It is difficult to predict what type of housing best solves the needs of students today and tomorrow. We cannot escape all decisions by saying: "Build flexible space." First of all, we must decide *where* to build it. Second, we must realize that total flexibility must be purchased at a price. Even the California Space Standard System, which is a great attempt to combine economy with flexibility, has made some very definite decisions as to the character of space that students will live in. It does not lead, for example, to the kind of crazy, odd-shaped space, vertically and horizontally, that students seem to delight in in old remodeled buildings in town.

I believe we must provide a much greater variety of solutions than in the past. This will give a greater choice to students, who incidentally, are from an increasingly broader section of the life spectrum, ranging from very bright students to married students and graduate students. And although it is of course important to provide comfortable and functional quarters, this is not the only criteria. If I look at young people's clothes and listen to their music, I am convinced that it is neither physical nor acoustical comfort that they are interested in. It is rather stimulation. They are already condemning us for too much concern for material comfort and materialism generally at the expense of idealism. I think the housing we provide them should meet this challenge. It should provide stimulation and involvement in the learning process — it should be related to, not isolated from, the world of which it is a part.
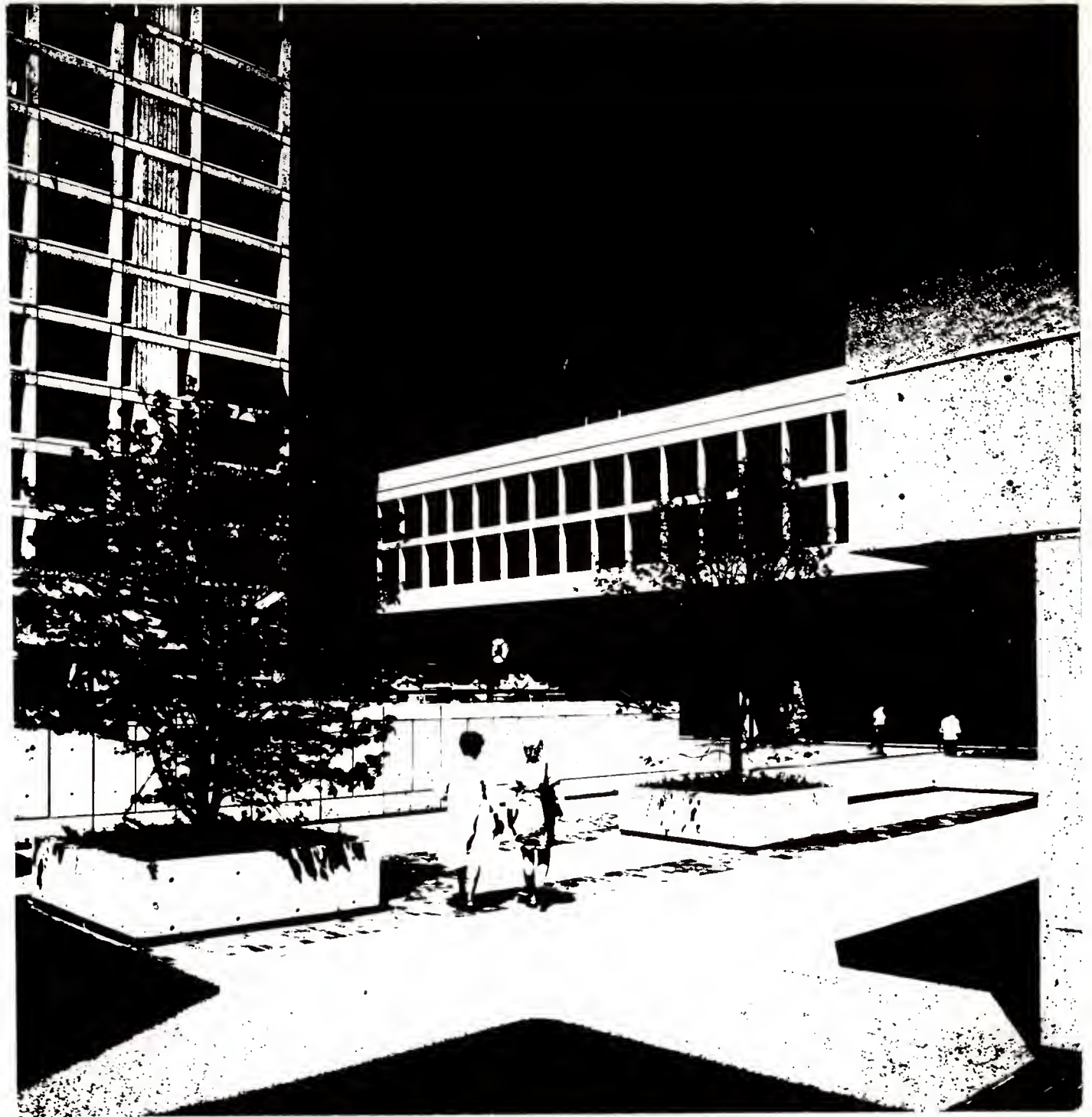
Children's Hospital Medical Center
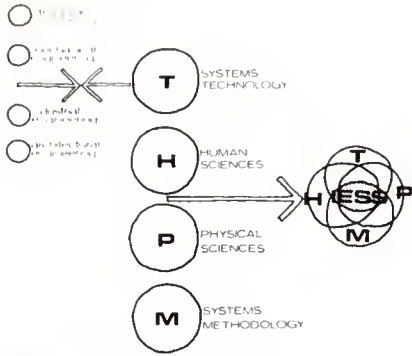TAC photo, Phokion Karas

G. DAY DING

We have had some very relevant and informative presentations on the users, the buildings, the movement systems, and some aspects of the control systems pertaining to a university campus as a whole.

The great complexity of our environmental design problems originates in no small measure from the adaptibility of man. This all too accommodating quality of man blurs what determinateness there might have been in the design equation, and elevates the search for a greater understanding of the man-environment system to the high priority level that it deserves.

This opportunity is taken to present aspects of the philosophy underlying environmental systems studies held by the College of Architecture at Virginia Polytechnic Institute and State University. I shall attempt to highlight some of the elements of a systems approach to environmental problem-solving while my colleagues, George Trieschmann and Wolfgang Preiser, will respectively complement this with an introduction to human behavioral studies currently undertaken by graduate students and a specific study of Virginia Tech dormitories.
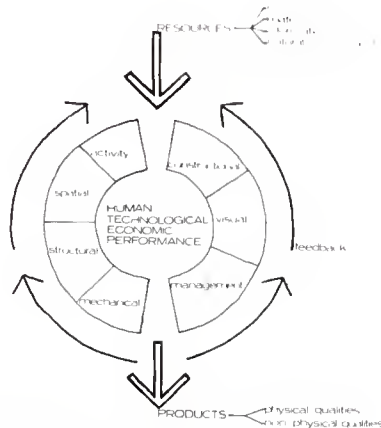
**INTERDISCIPLINARY
ENVIRONMENTAL
SYSTEMS
STUDIES**

fig. 1

THE ARCHITECTURAL SYSTEM
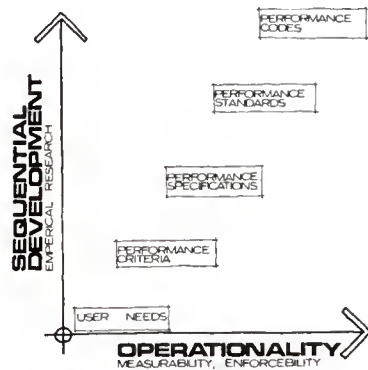
fig. 2

**PERFORMANCE
STATEMENT
HIERARCHY**

fig. 3

Interdisciplinary Environmental Systems Studies

Environmental Systems Studies at Virginia Tech identifies four areas of collective concern: human and physical environmental sciences; and systems methodology and technology (Fig. 1). Selective blending of these four components, compatible with environmental design endeavors, produces the required curriculum structure. Thus, the study of human and physical environmental factors contributes toward the evaluation and formulation of design criteria, whereas systems technology supplies knowledge about the technical hardware, and systems methodology explores and tests more sophisticated approaches to the process of design.

The Architectural System

Considering now only the architectural system, Fig. 2 attempts to depict its component subsystems (e.g. activity & structural), the concern for an optimal performance, and the necessity for a cybernetic feedback to prevent system degeneration. Therefore, the three basic critical concerns of architecture today are system-integration, performance evaluation, and information processing.

The Performance Hierarchy

Central to system or component building is the ability to more clearly define building performance in operational terms. Without it no repetitive building system can hope to approach its goals of economy and predictability. Fig. 3 presents the hierarchy of performance statements in which increasing difficulties are depicted as one progresses from the generic expression of user needs to the eventual codification of performance requirements. Considerable design and technical research efforts are needed in this area.

The Value System

This is fundamental to environmental design and may readily be illustrated by the contrasting examples of the Asoka Hotel in New Delhi with its colonial pomp and ceremony, and the New Guinea Longhouse where the central pride of place is reserved for the pigs.

System Environment

A clear and balanced understanding of the environmental parameters operating on a system cannot be overstated. Grave mistakes have been made through negligence in the complete and proper identification of significant parameters in the system environment. Example abound in questionable urban renewal products, and it also is succinctly demonstrated by the wind-induced failure of the Tacooma Bridge (Fig. 4).

System Interaction

The interaction mechanism among the subsystems of a system should be clarified and understood if a good system configuration is to be designed. It is important to know when to solidify or to articulate nodes of interaction. The process of assembling building elements together to create buildings is fully illustrative of this requirement.

On a higher level, system boundaries must be identified and the interaction between contiguous systems understood. The viability of urban and regional planning projects is highly dependent upon this understanding. Otherwise boundary incompatibility would result in unwanted perturbations that could create serious consequences. Adverse environmental impact of motorways, and the pounding damage between adjacent buildings in earthquakes, are two commonly occurring examples.

System Modeling

To model a system is to search for some understanding of the operating characteristics of its parts and the generalized input-output relationship in order to increase the reliability of one's predictive efforts. Like performance, modeling involves a hierarchy of operationality necessitated by the many inherent complexities and indeterminancies possessed by real world environmental subsystems.

For example, the search for something more precise than empirical modeling (i.e., experiential intuition) is illustrated by some of the analytical approaches to graphic statics by Leonardo Da Vinci— Fig. 5 presents his exploration of the parallelogram of forces.

Although great advances have been made in mathematical modeling of systems (ranging from structural subsystems to social systems), the need for experimentation remains significant, not only for the purposes of confirmation but also to attack unsolved problems. Familiar architectural and engineering models are so employed.

One very interesting modeling possibility is to exploit the intrinsic similarity between systems with distinct physical dissimilarity. Thus, the soap bubble or stretched membrane provides a simple analogous model for funicular shells, and Fig. 6 shows an example of a shell, whose shape has been both optimized and physically generated by a stretched membrane.

System Monitoring

Information required to activate cybernetic feedback must be judiciously collected through some monitoring system. The low state of this art in environmental design is well recognized, and tremendous efforts must be mustered in order to produce a quantum increase. The behavioral evaluation researches to be discussed by Trieschmann and Preiser have been obviously stimulated by this concern. Furthermore, monitoring systems (i.e., sensors, data transfer mecha-
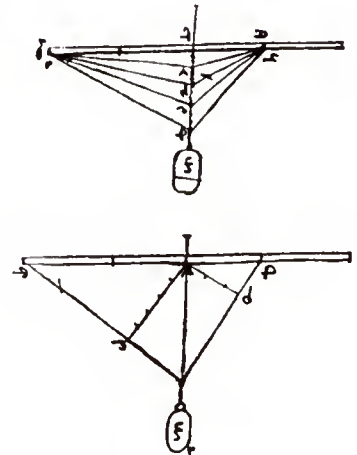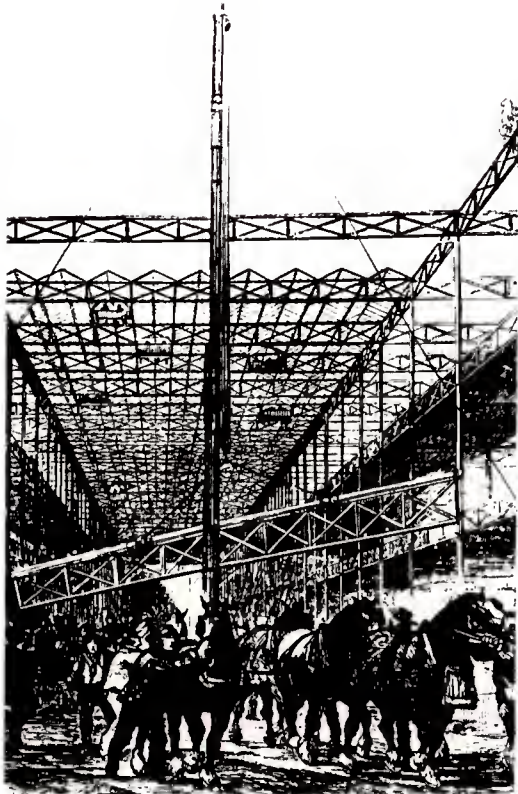
fig. 4

fig. 5

fig. 6

nisms, data display and analysis, etc.) developed in the physical sciences must be examined and exploited by social scientists.

System Building versus Building System

System building embraces the wider concepts of systems approach to the building process involving marketing, user-requirement formulation, general system coordination, operation, maintenance, etc., in addition to the more specific developments of a particular building system.

In this light, both the primitive tree house (Fig. 7) and the Sydney Opera House are building systems highly compatible with the technology of their time and place and, therefore, are industrialized systems of construction. Another famous historic example of a building system—a highly industrialized method of prefabrication—is the Crystal Palace (Fig. 8).

These are "one-off" building systems that were not developed from an initial system building concept. The latter is glaringly exemplified by the mobile homes and portable construction site tiolets!

Subsystem "Building Blocks"

The size of basic "building blocks" fundamental to a particular building system influences its adaptibility and combineability, and a cost-benefit analysis should be made to determine the "best" dimension. Fig. 9 depicts qualitatively this trade-off between production and installation costs and the benefits occurring from flexibility of application.

System building, in contradistinction to traditional building practices, involves distinct system changes for its operation—of which many currently are searching. Performance specification, design coordination, contractual procedures, are some of these aspects, and to isolate just one, Fig. 10 overviews the re-direction required in control of system tolerances. This re-direction in turn necessitates the consideration of changing skills and manpower needs in the production process.

fig. 7

fig. 8

fig. 9

fig. 10

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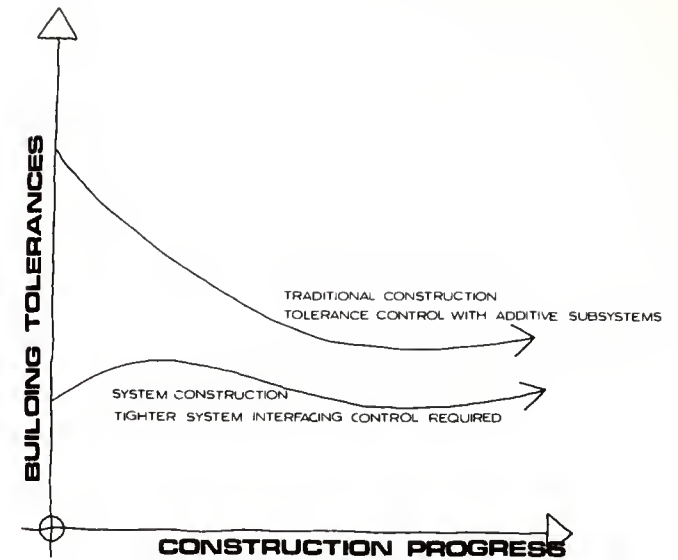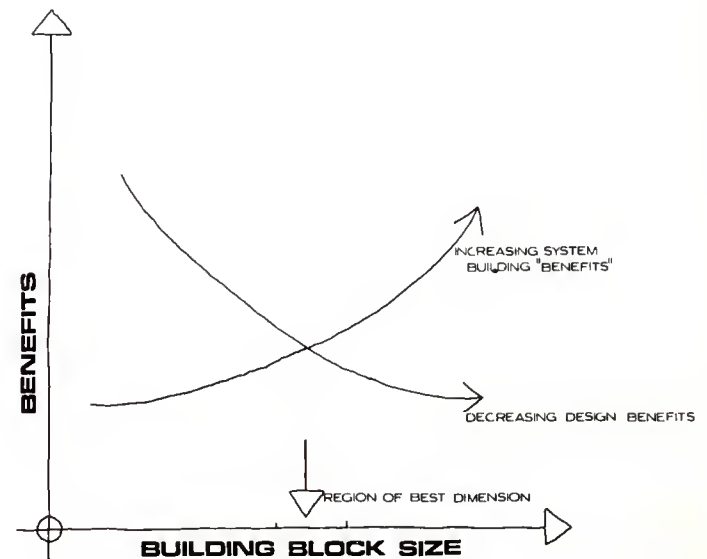
GEORGE TRIESCHMANN

The opportunity to introduce some of Virginia Tech's students makes me very happy; they are a very exciting group. I don't think of them as students actually; they are teaching me as much as I am teaching them.

My bag specifically is the behavioral area in the environmental systems program. The data we are presenting here is actually raw; it hasn't been processed. We hope in context with our agricultural theme that it's a bud, but we are not sure.

We began by approaching the behavioral end in an attempt to synthesize the data that is available in the behavioral sciences in a way that an architect can use.

We saw difficulty in the great amount of information that was being heaped upon the architect from the behavioral area — he seemed to be inundated. There was also the danger that he was going to get carried away with it. The students — particularly young students who feel this is an exciting thing they can get their hands on — and I think we have to keep our heads here and not go the way that the structural thing did at the turn of the century — where we were all excited about our new ability to analyze structure and all of our buildings

started looking like bridges. I think the difficulty may be that we have been pushing to the top of the hill to get this behavioral thing started and now we might get carried away and rush down the other side of the peak when we ought to flatten out there and integrate, synthesize. This is what we have attempted to do in a series of seminars that we are having here as part of the environmental systems program.

I will quickly run through the students. Alan Baldwin has come up with a concept for an Envirogram. His work is moving towards something that seems to be very pertinent. He is correlating various behavior parameters, starting with the old time-lapse photography methods. We want to build on that, increase the scale, and integrate other parameters. Alan is working with acoustics and the thermal variable correlated with this time-lapse photography. He is producing what he calls Envirogram, which he will in Winchester County, Virginia, try out on a comparative study of open-plan schools. We have been working with open-plan schools for some time; Alan has developed this, I think, to the point where he can actually get some results.

Whitney Wagner will be dealing with the acoustic environment in these open-plan schools. This seems to be a question everybody asks, "What about the noise in there, isn't it going to be noisy without any walls?" Some very qualified people have commented on this without relating to reality, so Whitney is going into the open-plan school at Winchester and conduct a comparative study in regard to the acoustic environment there.

Mike Beachy is also one of our early pioneers. With Whit and Alan, Mike came in last year on an experimental program. Mike is working on behavioral programming; he is trying to feed behavioral information into computer programs.

Also, we had a very interesting thing happen. Its under directed study. Larry Shifflett is working from Dr. Hess' concept of the pupilargraph; you may have read about it in *Life* some years back, and I understand it was in a ladies' magazine recently. He and Henry Hammer are attempting to put together the use of this tool as an architectural measure across cultures — to pick up indicated user preference in space and indicated user preference in form. They are finding some difficulty with the techniques involved. In fact, I think they are giving as much help as they are getting in refining this tool, but it seems to be something that is working toward a useful measure to get away from the subjective verbal response only.

We also have a group, three young men, who are attempting to develop time-lapse photography to find a behavioral pattern in relationship to the plan form and to the total form. They are looking in a holeistic way — trying to put it together in some sort of syntheses for themselves. As a teaching tool we find it rather exciting. John Bradford, Ron Collier, and Brian Sumption are working on this. They are moving from the photography hopefully to a "synthestic" procedure which provides a plan presentation at the same time the photography is presented so that the relationship, the motion in the photography is related to the plan form. We feel that this is the architect's usual tool for designing, so we are shooting at that.

As I mentioned, this is very raw data; its the College of Architecture building's lobby that they are beginning with. They made some variation in the lobby while they were conducting the study, demonstrating the changes in behavior. The shots are taken at two frames per second to pick up pattern. After you get over your first shock of motion, you can start looking to see the changes in form affecting the movement pattern and interactions.

It is a very simplistic approach, but we think it speaks to the architect in his vernacular. We *hope* it

does and we hope to develop it into something more sophisticated than simple time-laspe photography. They are basically trying out techniques to determine how they will go about this. Move their point of interest, and they are getting a qualitative check of the environment rather than the more analytical method that might be a little more respectable for the traditional behavioral scientist.

The introduction of the sensor into the environment is, of course, going to affect the behavior in the environment. But as Day Ding has shown in this work with structures, you accept this and you understand the variability you cause and take it into account.

The inside of the architectural office will be compared to the graduate division of the architecture school; it is fairly interesting.

The other side of the architecture building includes the graduate division and the research center. The desks on this side of the building are a little different and there is a little different pattern.

The development from this, we hope, will give us a tool that speaks directly to the designer in relation to feedback. We hope that he will get some meaning from past design decisions so they can use them in the future. This is one of the reasons that it will be put into a plan.

In using the merged data the plan would be below this and shown at the same time either with 35 mm still slides or with motion pictures with this type of presentation.

Of course, the sample and the number of people involved have changed. There is a difference, a gross difference, in behavior pattern. The self-evident nature is what we think is of value in here.

Now, Alan Baldwin is doing something similar to this and correlating it with the acoustic and thermal environment at the same time. Getting a time correlation to relate a pattern, to see if he can pick up

a pattern between these things. We figured we would experiment with ourselves to keep from getting the reputation of "Big Brother."

We do seek voluntary participation in this type of experimentation. So far we have had overwhelming cooperation from people who are willing to do it for the benefit of the feedback that they would get.

This is pushing the architectural end a little bit, the architects are being asked, "Well, why are you doing this?" or "Why haven't you done this?" We don't intend to push. We just hope that it gets done.

Time and motion studies do this same thing on a different scale. This is not a novel idea, but we felt it was something that we could start with as a teaching tool, developing it to more sophisticated levels. This is the first attempt these students have made. This was done at the end of the first quarter of the first course that they had in the human enviornmental factors of this program — the graduate division. Some of them are experienced architects. I think the group is a pregnant group and I think they are moving toward something that would be useful, eventually. We don't look for it to pay off immediately. We don't intend to rush the results.

PREISER

Before I continue in line with what Dr. Trieschmann said, I would like to make some critical remarks relating to yesterday and the discussions that took place and then go over to the specific work that I was involved in which is "Behavioral Design Criteria in Student Housing." In general, the area that we are working with, as I would phrase it, is "evaluative concepts in environmental design".

From yesterday's discussions I got the feeling that those people who came here to walk away with a bag full of concepts and cook book recipes, hoping that now we know what we are going to do with our campus, I think will be very disappointed because there is no such thing as "the" solution to campus planning. We know that each situation and each campus has its different kind of population, different kind of location and contains all those factors that really prohibit a general solution to be applicable. But what we found out, and this is the stimulating thing here, is the process of how to get to a solution and the things that have to be involved in getting to it which means, we just touched upon this, the human aspects of environmental design. I find them the most important part of any design solution. Any architectural solution or physical setting alone can't do it. Any URBS system can't do it alone unless the organizational set-up is provided with it that allows the student to do the things he needs and wants to do.

Having worked with students and being very closely related to students here at Tech for over a year and being a foreigner myself, I feel more critical and perhaps have a clearer view of what is going on here because I have a completely different university background—European university background. So I think I feel qualified to echo some of the student views on this particular institution which might be symptomatic for the whole country. These views I found out in talking to them almost every day, spending many hours in their dormitories and chatting with them while taking photographs, making sketches, etc. One of the views very common among students is that if Tech continues to grow at the pace it presently does without providing adequate facilities for a normal conduct of life for its students, then the students feel that soon there would be some kind of unrest and uproar also on this campus. It will come later with some kind of retardation as many other things that would be more desirable to get here but the student feeling is that if we don't provide these facilities there will be unrest. A common notion about this college being a "suitcase college" is very descriptive of the situation, and as Interstate 81 approaches Blacksburg the escape routes improve and everybody gets away even quicker. Some people we find leave our classes at 2:00 because the girlfriend is waiting back in Washington at 6:00. This University, I find, is a very unnatural organization or set up in a very beautiful natural surrounding and one should think about this point with regard to the size of the university; its growth. Enrollment at Tech is now at 10,000 and we heard it will be at 20,000 some 15 years from now. Will Blacksburg, a town of 9,000 inhabitants, be able to absorb these numbers and provide the necessary facilities?

Then we heard about concern for students and I wonder are we really concerned with the students and we heard about rising the cost of education. Dr. Shepard touched upon this issue. People buy cars every third year and throw about $2,000 away. The

investment in education which forms a man and determines his life expectations — and we hope to turn out educated men here — to me does not seem to be in the right proportion to what we are consuming. I particularly think in a very much dollar and efficiency oriented society the outcome, if you have a very broad education, will be more money eventually through higher positions which you can achieve.

We say education is a university goal. What does education include? Is it only transmitting knowledge? Then, what we could do is sit at the closed circuit TV set and get the lectures to our homes and you wouldn't have to build any more campuses. But even more important is the interaction between teachers and students. Among the students, and we hear different kinds of students speak here, there is no desire to have all disciplines each in their own building and get some inbred kind of creature out of the university. Let them interact with different disciplines and these thoughts might have influence on the organization of a campus plan and whether students are separated or brought together.

For an educated man, his time at the university is the most important one. It acquaints the student with a variety of facets of life and society. It is the uncompetitive setting of the university where he really has the chance to interact with all kinds of people. People is the major concern for the university. "Environment shapes man" is a very old notion. Churchill said that "we shape our buildings, then they shape us". An essential part of the university environment is housing facilities. Here we try to educate the elite mass or mass-elite of the nation. The leaders of tomorrow will take over quicker than we realize. Generations become shorter and shorter. The world changes quicker than we think and so do the students and their housing needs and yet we basically don't provide changed concepts for them. We basically try to sell to them a kind of housing that was conceived about 300 years ago-maybe a few light fixtures and commodities have been added. Any architect who would try to sell to a client a concept that was designed 50 years ago would soon be out of business but with students this doesn't seem to be so. For example, a hundred years ago we didn't have phonographs. Now the matter of noise has changed the requirements for the environment and so have many other societal changes that we have to take into account. Yet basically we still build as we did many years ago. From the viewpoint of the students here at Tech it seems that they are being looked at as a very strange kind of animal that in a zoo-like atmosphere is kept and preserved in a basically unchanging setting.

To them student housing is not more than nocturnal storage and they feel they are still living in the stone age. They have expressed that archeologists in 5000 years will not run into any trouble identifying the varying building types because as far as dormitories are concerned there is only one here at Tech.

There has been a great change in the design process as changes have taken place and as society grows more complex. We feel that a design concept based upon intuitive design decisions does not work anymore.

The needs of the students have changed; they have become more complex. Yet how can the architect know what is relevant to the student—what the student's actual needs are? We assume we know what students think. But this is a very superficial approach that is still being made. To establish a systems approach to design includes also the behavioral "system"; in other words, the behavioral patterns that are inherent in any kind of situation were people are involved. For example, you can sense this by observ- and knife — it speaks for that person. Someone who is specially trained can read information patterns out of human behavior settings.

Transfer the situation to a dorm setting and you wonder why do people run around in T-shirts and underpants, nothing else on. This seems strange to me, I don't understand it and you will not understand it either, but we have to find out why they do this. This observation took place in a freshmen dorm at V.P.I.

Observations of different behavior were made in upperclass dorms. What I am getting at is that there is a great need for relevant information to base our design assumptions on—behavioral design criteria. In the environmental systems program of the College of Architecture at V.P.I., a big portion is taken up by behavioral research; in particular, evaluative concepts of environments and investigation of man's response to physical environment. We heard of some of the approaches that are being taken. I took a different approach.

What are the means of expression that man can use to communicate his attitudes to someone else. He can speak, he can draw, sketch, and he can write, of course. These are the basic means of communication. On the other hand, if we want to find out what it is that someone perceives in an environment, we have to get at his attitudes. Things as they are perceived are not constant—they are changing at all times. One can perceive the same thing at a different point of time in a completely different context in an entirely different way, which means we have to look at attitudes of people and have to find out what they feel about their environment.

Two basic questions arise in this context when we talk about students in dormitories, for example. One is; *"What* is relevant to these people?" We may believe they want a suite-like arrangement but we believe this because we are dissatisfied with the corridor type of arrangement. But who can actually tell us whether one arrangement works better than the other? Have we asked the students? Have we experimented? Have we observed what they are doing in there? We have to find out what is relevant to people and the issues which they are concerned about. The second question is: *"How* important are those issues if compared on a scale of priorities?" This basically amounts to a measurement of attitudes and values of people with regard to their physical environment. My approach was to find out whether it was possible and to which degree of success one can measure verblized response. One can do this by questionnaire but that is a very limited method because whatever one puts down excludes everything else—I mean, any form of a question excludes any other possibility or choice that the respondent might want. Using the forced choice format of categories like "Yes or No" or to give him several choices is a very poor method. In order to find out what is relevant we had students make statements about dormitories in general. We did not specify to write about any particular issue, whether physical or nonphysical, administrative policies or whatever. The students wrote about 2000 statements. They actually wrote about almost any aspect of dorm life, but interestingly enough, mostly about physical features of dormitories. We can assume that they only wrote on what they were actually concerned with. They expressed likes and dislikes and things toward which they felt indifferent, but things that mattered. With this information at hand, we could categorize the kinds of things that mattered to students, as I pointed out, mainly physical features. Of course, there was not a univocal response. Many people feel very, very favorable toward the inspection system and certain aspects of dormitories. But the majority had very many negative responses to physical environment. The second stage of this experiment was to determine the *degree of importance* of these various features in the students' minds. We also found out *how much agreement* there existed among a great number of students on the degree of importance of a particular feature in dormitories by using scaling techniques based upon the work of Thurstone. It is possible to find out how important a certain feature of dormitory environment is to the user. He can also express the relative scale value of a hypothetical feature, one which might be desirable but which he does not have. With this method one finds out how the user relates to various properties of the environment. The method of finding relevant issues in student life and then testing these issues against a relative scale of importance and finding out how important they are to the students showed useful re-

sults. I think, with this information the designer can start making a *meaningful* program for the design of a better environment.

DISCUSSION

(Question) The question is addressed to Dr. Riker: In essence, "Is a major part of the problem in housing a result of inertia of the students?

(Riker) Apathy was the key word 10 years ago, in terms of students. I suspect there is still inertia, but I think it is the result of lack of stimulation. Here again, when students fail it is their fault, and I am not sure that this is the case — or whether that gets at what you are saying. Are you talking about apathy in residence hall programs?

(Question) Yes.

(Riker) Student Government, in the halls and out, or both?

(Question) That's right.

(Riker) One very basic reason is that what passes for student government in residence halls is usually a very superficial kind of thing. When decisions are to be made, students are not actually involved, and they know it. So the inertia comes from the attitude "why bother."

(Farmer) Also, the students who are active and interested in getting things moving are very unlikely to live in the residence halls.

(Question) Why should an urban university have any students in residence?

(Farmer) The urban university is a special case.

(King) Because some students want to live in residence halls. You sometimes lose graduate students (as Virginia Tech did in an exchange of letters which were sent to me recently) because there isn't a facility available close by. There are students who don't want to go out in the housing market. There are also institutions like Columbia — most of the streets around Columbia aren't safe for men and certainly aren't safe for women.

(Farmer) Apparently it is because of what Columbia has done up there.

(King) I don't know of very many urban universities that don't somehow feel the need for some students to live on campus, even though many of them want to live off. I think what we were saying about options is that you really have to provide some sort of optional choice for the student as to whether he wants to live there or whether he wants to rent housing.

(Farmer) I think there is a question, too, of whether you can assume that simply because you are in an urban situation, students can find reasonable housing within reasonable distances. There is a tendency for housing immediately in the university area to be terribly overpriced simply because there is over-demand there. So you get the graduate student who is married and has two kids and can't afford to live here — he has to commute 30 miles. What if he had a lab experiment going that requires him to check on it every three hours? This student needs to live —

if not in the immediate campus vicinity — in housing directly provided by the university.

(Brandt) I would like to push that a little bit further if I might. It seems to me that everybody is answering this from the standpoint that a residence hall is housing. Is it inconceivable or undesirable that the type of living-learning experience offered by a residence hall might be superior to what the student is receiving at home by commuting? Is that a possibility at all, or is that out of date?

(Farmer) The question is: "Is he really living at home?" You always assume that commuting students are living at home with their parents. They often are not. They are living off in whatever housing they can find. As to the values of residence hall living, I think that gets back to the question that this is an urban university. I think that we haven't paid enough attention to the fact that there are very many kinds of institutions. An urban university that has an entire city as its resource for extra-curricular activities, cultural activities, etc., may not have the need to do this kind of thing in housing, or on campus at all.

(Riker) I think, also, that the whole notion of social and cultural opportunities that present themselves to students living and working within the city is a virtue of the urban university. There was a two-day conference on your campus some years ago that spoke to this issue.

(Shepard) First, I am reasonably convinced that in most residence hall situations there is little learning that goes on that can't be accomplished within the group with which the student will associate if he were living at home. Secondly, the measure of achievement or success is a grade point average. I know from our studies that the students who do the best grade point-wise are the ones who live at home. I don't have much sympathy for this phase "living-learning" unless it is related to an academic porgram. This really has meaning and brings people together — it is the root to a degree in creative studies or liberal arts.

(Question) Are there advantages, as a category, to the Oxford type of student housing and faculty interaction?

(Riker) I would join with Dr. Shepard in describing the University of Virginia situation. My impression is that there is a physical proximity of faculty houses, student houses, and classrooms, but my impression is that there is no tie in terms of the academic program itself. While I think it is very nice, and there are all kinds of factors at Virginia, I feel that for it to really have significance there must be a close relationship with a specific part of the academic program. I am not aware that this is true.

(King) There are some historical factors that affect the scale of educational institutions that I don't think can be ignored. There is a great sentimental attachment to the Oxford-like systems these days because they are "going down the drain," and they look a good deal more attractive than they used to when they were "top dog." But even there the college system is tending to break down in the sciences because the action is at the university level. You simply cannot run serious scientific facilities on a scale that can insert them in a Cambridge or Oxford College. The same thing is certainly true here. Stanford University recently put in a linear accelerator which came complete with a staff that was just about the size of the staff of Stanford University before they put it in. You can't put it in on a small living-learning scale; and yet, it may be the most important single piece of equipment to a large number of students who come to Stanford. I think the growth and proliferation of science programs and equipment has had a very strong impact in breaking down the liberal arts college group. You can do history to some extent in a small college situation, but it is very difficult to do physics that way. And it is not even easy in this day of very specialized faculty members to get distinguished historians and distinguished sociologists to break away from their departments and spend their time running around with undergraduates.

(Farmer) Are you beginning to get at the question of physical proximity as a whole different thing from program integration? I think that is another question. The current way of designing campuses is: have downtown where you work; have suburbia where you live; and have student affairs off somewhere else. A concept of campus planning, as opposed to some of the things that are beginning to merge where you get more mixes, suggests there is no particular reason why the housing can't be over the store. That's really another question and I don't know whether anybody wants to get into it.

(Brandt) Is there an ideal in terms of supervision in university housing?

(Shepard) Surely the ideal is no supervision at all. This can be accomplished in some situations, but it can't be accomplished in others. The ideal as I see it is minimal or no supervision — students policing themselves. The British have done this very well. They haven't poured thousands of people into a small congested area — two people to a room. They have a room for every person, and I think the ideal situation (which I have observed there) is perhaps 18 people around a stairwell that includes a kitchen and a pantry. They police themselves and clean up after themselves. I think we ought to be bold enough to let some of our students follow the pattern that the people from whom we revolted have worked out so successfully; but we are reluctant to do it. We have to have counselors holding people's hands and passing out Kleenex and that sort of thing, which I think is absolutely ridiculous.

(Harkness) I'm just a little bit worried that comfort rather than stimulation is being pushed, and that saturation of everything with acoustical tile and carpeting, perhaps even air conditioning, is an architectural aspirin tablet. I hope that the results of this discussion will be an environment of stimulation for students — not mere physical lack of discomfort.

(King) I think it would be a mistake to confuse the URBS components or the URBS building system with architecture. These are pieces from which architects can build architecture; these are not architecture any more than bricks are architecture. As far as your interest in bad acoustics, I don't share them. It seems to me that the student is entitled to

quiet in his room. I find it very difficult to concentrate in noisy places, and it is difficult to concentrate on the kind of study you do in dormitories if you have to listen to the phonograph next door, the radio next to you, and a co-educational discussion going on across the hall. So, I really don't think acoustical discomfort is a good idea and I don't really see why you should be overheated or excessively cold. Thermal comfort seems to me to be a good idea; the fact that incompetence often produces buildings which are uncomfortable does not seem to me to make them desirable, even if they look good. I refuse to think of these things as one contradicting the other. I don't think good architecture is necessarily uncomfortable. Living in a smelly dormitory, or one that is improperly ventilated, in the 20th century is preposterous.

What were the other aspects at which you took offence — carpeting? I would prefer to see some floors carpeted and some floors not carpeted. I would like to see some variety of physical environment so that you do get some stimulation. I think the unending discomfort of those dorms that Bill Shepard was referring to doesn't stimulate the students except in rather destructive ways, such as their negative concern for ugliness and discomfort of these buildings.

My guess is that you emasculate people by stuffing them into buildings which they themselves have no control of. This is all right if it's a classroom, but if it's at home — a place you live for nine months — even if there is some sacrifice in the control the architect exercises over the total environment, I would like to see that sacrifice in favor of letting the occupant fix it up to be his kind of place. I think that most people prefer to be comfortable and to control things like the sound and the air temperature in their own spaces.

The URBS System, which is a modular component structural system, has adaptability, flexibility, and convertibility. It is sponsored by the Portland Cement Company. Does it have anything other than cement in it that has real merit? It's reinforced concrete so it has some steel in it. I don't quite see your point. The structure of any building is built out of some material. The concern with the URBS project was not whether it was made out of cement or not; indeed, the thing was bid on performance specifications. The specifications under which it was bid simply said what the structure was supposed to do — not what it was supposed to be made of. There was steel bid against cement, and if somebody had figured out how to build it out of wood or plaster of paris, they could have done it that way. There were certain requirements set forth and in this case, the most economical solution of those requirements happened to be in concrete. But that is just the structural system; that wouldn't get into the partitioning and the other components.

I would like to know what happens to the residence halls that are already constructed? What will be done to relieve the situation that already exists? Take, for example, those Berkeley buildings. Given some money or a drop in the number of students invloved, it might be possible to make them reasonably liveable simply by taking those excessively small two-student rooms and turning them into one-student rooms. At the moment, this is very difficult because the students are expected to pay the entire cost of housing. This is not true everywhere, but it is true with a number of places, including the University of California. This would, of course, almost double the cost of dormitory space for the students. But that, some sound conditioning, and a few other things would convert them into reasonably habitable spaces.

(Riker) I would certainly like to add to the subject of building renovation. I think this is an area that has been too long neglected. In the interest of trying to build more spaces for more students, administrations have said, "Well, we can get by with what we've got." Yet, we really can't. I get the impression that there are efforts to do something about this, but, of course, the problem is getting the

funds. But the way a number of buildings are financed, funds should be available within the financing plan, or if this is not the case, then money must be found to update these buildings.

There is one additional solution that might be used. (I'm following Dr. King's remarks.) These towers at Berkeley are in a very good business district. It might be possible to remodel the lower floor for a store, the next two floors for medical-dental offices, etc., and the remaining floors for university offices. If we could sell this to the State of California we would get them off our backs and build something more liveable.

Another way that is being tried at some institutions is to consider the total needs of the university and take some of the older residence buildings and remodel them for offices, which can be done often at less cost. Then new funds are devoted to new housing. There are a number of ways this can be approached.

What is California doing to these dormitories we have heard so much about? The principal thing which I hope will occur will be the use of the URBS program, which will provide the necessary flexibility-convertibility of spaces. So spaces can be changed as student desires change. As the student mix changes, we can convert our single rooms or suites into apartments and double rooms if we need to. Student desires are continually changing. But we built these towers with concrete partitions looking ahead.

What are the guiding principles in student rooms? Mr. Knox, you have taken two-student rooms down to one-student rooms. Do you want to talk to that particular?

(Knox) We made the first mistake of taking good student residence halls at the University of Chicago and converting them into faculty offices. We are now considering reconverting those to residence halls. We made the second mistake in building residence halls of the Berkeley kind with concrete partitions. Once you have them, there is nothing you can do. We made the rooms singles and provided the student with the greatest amount of space. He pays a slight amount more in rental — not double what he was paying — and the university picks up the tab. The third thing you can do is get a much better design on your next residence hall and admit that you can't really foresee the future; be as open and as flexible as you can and don't build anything like something you have now. One of the things that happened at Berkeley and the URBS program, I would imagine, is that they are not going to build any more two-person rooms of that kind. As the years go, in a decade and a half, perhaps some of these two-person rooms will be just fine because they will be a small portion of the total stock of units and there will be some students who want that kind of unit.

(Farmer) One other possibility is the question of privacy in two-person rooms. The conflict of schedules between the students who live here creates a problem. One of the ways you can get around this, to an extent — however, not ideally — is to provide more in the way of escape hatches. In that same building you've got one of these vast and glorious lounges that is of no use to anybody. It could be broken up into carrels or smaller usable spaces. Provide some place for one student to go when his roommate it typing loudly or has a girl in, or whatever.

(Question) He has a girl in where? The room. I understand this is a problem for roommates — for hours on end they are unable to enter their rooms.

(Riker) As I think you were inferring by your question — privacy is a pretty difficult matter to define, isn't it? What is the privacy that we are looking for? I think it is several things, but this business of compatibility is perhaps accociated with privacy. Students move to an apartment where they are crowded to four in an apartment, but they've got privacy. So isolation is one thing and privacy is another. I think you've got to decide what it is.

I know an eminent university that tried to present the solution to the problem you have posed. A wealthy benefactress gave the university a large sum of money to build a meditation room on top of

the chapel, perhaps thinking along the lines you have presented. But the Dean of Women had to have the room locked.

This business of what one is trying to get away from or get to is relevant here. Let me give you an illustration of what has just happened on our campus. I think it is a little different for the southeast, but not for other parts of the country. We have just opened a rathskeller serving beer for the first time on campus, but associated with this is an excellent bill of fare in German food. The interesting way that this was done was that the faculty club took out the beer license and the students became associate members of the faculty club. This is the kind of association that seems to get along very well, and I would say this would be true either on or off the campus.

(Farmer) In terms of total campus planning, talking on the scale that universities are rapidly becoming and about student populations of 30,000, you begin to raise the possibility of the same campus having several residential communities. These might include rathskellers here and a good restaurant over there and that sort of thing so that the scale, properly handled, could begin to work to the institution's advantage and to the student's advantage. If you are sick to death of eating in your dining hall you can run over and eat in somebody else's German restaurant. This kind of mix and options in commercial services essentially could begin to alleviate some of this feeling of being boxed in forever in your office.

(Question) How do students participate in a co-op housing project?

(Shepard) The co-ops with which I am associated are wholly student owned and operated. There are three senior adults, like myself, who sit on the board of directors — there are probably 20 persons on the board of directors. They hire a buyer-manager, a dietitian, and a couple of cooks. They, the students themselves, do the rest of the work. They put in five hours per week. The rates are far under the university rates. The students are guaranteed that they will have all they wish to eat. It may not be in every case *what* they wish to eat. They are provided 21 meals a week and unlimited snacks in the evening. It's extremely successful. As Mrs. Farmer pointed out earlier today, students should be involved in their own residential facilities, but it is my opinion they will only be successful when they own and operate them themselves. This organization started out with nothing but debts and some furniture borrowed from the YMCA and rented an old house 33 years ago. Now it's a multi-million dollar corporation, but it's done entirely by students.

(Question) How many are there?

(Shepard) There are 1,000 students in co-operatives — probably in 12 houses. That's all one corporation.

(Question) Did the university help with financing at all?

(Shepard) No, they have gotten no assistance whatsoever from the university. They are financed on the profits they make from their operation. They were running out of an adequate central facility — a kitchen — as the building was going to be condemned. So they promoted a fund-raising campaign. They raised $850,000 to build a central kitchen, warehouse, trucking facilities, and a unit which housed, I believe, 200 persons. They have a mortgage, no federal money — they couldn't get any federal money because the university had to sign a note, etc., and it couldn't do that. A businessman would say this couldn't be done and certainly they have taken risks that businessmen and business managers wouldn't take, but it's a marvelous operation.

(Question) Is it autonomous in the university as far as rules and regulations?

(Shepard) Wholly autonomous. At one time the houses were approved by the university. When the students built this new residence hall they wanted to have co-educational living. They had a wing for the women and a wing for the men. They didn't want to have a house mother which the university required, and they wanted to make up their own rules. Well, as far as the senior adults were concerned, they said go ahead and do it. But the university's position was that

The university at one time proposed to the co-op that it take over one of their residence halls, an old residence hall that was obviously a white elephant that was marginal in operation. They were interested in it for a time. I advised the directors not to get involved with the university because, I believed, then there would be bureaucrats like myself looking over their shoulders and asking: "Have you painted the wainscoting here; is the kitchen absolutely clean; who got food poisoning last week, etc.?" I think the students have to own and operate it themselves.

(Farmer) In Canada they are beginning to do it, still on a small scale, but much more than is being done here. One example that I am familiar with is a place called Rochdale in Toronto. There they are able to get federal government money in the form of government loans for their financing. What I find interesting about Rochdale, in addition to having all of these qualities, is that they have set it up as a kind of free university. That is, they have hired faculty members to teach certain kinds of courses in return for their room and board, so to speak. This amounts to really a residential college — one which the students have not only set up, owned, and operated with regards to housing, but one in which they have also administered their own educational program.

I think it's important to point out that the old co-op notion used to involve students doing all the work. When you begin to operate on this level the students are hiring full-time people — managers. The students aren't in there washing dishes unless they decide to do it that way. They hire professional administrators to actually run the buildings, but the students as a body are in control. They do the hiring and the firing and lay down the rules about how it is to be run.

(Shepard) The hall the co-ops built cost approximately $6,000 per bed space. The university costs now are about $7,100. There is federal legislation which provides that co-operatives can be started on university and college campuses providing the university is able to certify that this is a respectable organization and that the facilities built will not compete to the detriment of the university housing funded through federal guarantees.

(Riker) My impression is that actually the college housing loan program will be glad to work on this.

(Question) A student gave an example of living with eight other students in a pre-Civil War farmhouse unless they had the housemother and abided by the university rules they wouldn't have the stamp of approval. So the students said, "Fine, we won't have your stamp of approval." So they went off the approved list and they have been most successful; they took all of their houses off the approved list. They had a house which was originally an apartment house which they turned into a food-service type dwelling. They went one step further — they rented these former apartments as suites; one suite for men, another suite for women. They don't mix them in the same suite in the same apartment. Now the university is recognizing the asininity of the stamp of approval. How can you say, when you have an approved house, that you can guarantee to the parents what the behavior in that house is going to be if you don't supervise it. So the university now uses the term "registered housing." The co-ops are registered.

(Question) How did they raise the $850,000?

(Shepard) These were gifts. They raised a large sum from the alumni. You see, with the history of 33 years of operations they have quite a contribution from the alumni. The students themselves contributed their $25 deposits rather than taking those back. The students formed a committee to solicit funds from the faculty (and you know how wealthy all faculty are) and they contributed $40,000. Then one foundation contributed $200,000 and they got additional monies from other foundations.

and felt that he had achieved social interaction in this situation. Do you feel that this type of interaction will be achieved in dormitories and if so, how?

(King) I think it is very difficult to achieve this type of interaction in dormitories as they are now

normally administered. In the first place there is no particular reason why you should have the same kind of social interaction with eight people in a suite when these eight are arbitrarily chosen by some computer program serving a major university which represents a broad range of races, religions, ethnic groups, and geographic areas. The student has not chosen either the space or the other seven people. When he goes out and chooses this particular house with some people that he cares about, I think he expects a very different kind of social arrangement and he gets it. It's my impression that very often when there are plenty of places on campus, old houses that are bought as part of the campus expansion program and are often used for housing for a few years until someone bulldozes them down, are very often quite popular places. They are popular for the same reasons that kids will choose to get away from the institution. Usually the institution is no longer concerned with maintaining these old buildings and a student can do anything he wants in them without running into trouble from the janitor or the dean of women or somebody because he painted his wall some queer color. So the abandonment of these buildings by the institution often makes them much more attractive places to live. I really don't think you can achieve the same kind of thing on a broad institutional basis, just because part of the reason you like being out there was a matter of personal choice and a positive decision on your part, rather than simply falling into some institutional arrangement which some benevolent housing administrator had provided for you.

(Farmer) This refers to the matter of the university providing an option. In terms of dormitories, though, it's an extremely difficult problem so long as everyone has decided that you cannot run an efficient food service operation unless you have 2,000 people eating there three meals a day — 21 meals a week. When you are putting that many people together in a lump, the problems of breaking it down in any meaningful way are just enormous. There have been attempts such as jogs in the corridors, vertical plans, and all sorts of things which begin to get at this problem but don't quite solve it. We really need new architectural forms.

(Question) I appreciate Dr. Riker's comments as to whether universities should continue building residence halls. I would be grateful to hear the other panel members' discussion on this.

(Farmer) Do you mean here, or generally?

(Question) Both.

(Farmer) I haven't the faintest idea about here. But I think that's the point. It depends enormously on the situation. I haven't entirely given up on the private builders. I think they could be persuaded through all kinds of means to set up really competitive housing. This might be one of the ways that you could get diversity and options for students. It may not be possible for a university to provide battered-up farmhouses, ivory towers, and all the various kinds of housing that certain students are going to like at various times in their college careers. This might possibly be a place where a private sector can indeed come in and build things that the universities cannot. How you work out the cost and quality problems, I don't know; but I do think it is a possibility. The answer to whether you should build any more on campus is: "Yes, of course you should, but if you can get someone else to do it, that's good, too."

(Riker) I didn't mean to imply that the institution should do it all. I was really implying that if one of the financing methods is to utilize some private developer, that is fine. I was trying to speak to the point of just washing our hands of the whole notion regardless of how it is financed.

(King) If I may speak to the first part of your question — I wouldn't build any more residence halls here. This is a candid observation — no more units at the maximum cost you are currently using. I think in order to have adequate accommodations, you are going to have to raise your cost per bed space. Then, secondly, I would build a variety — absolutely a variety — of accommodations. Your current enrollment ceiling for 1980, as I recall,

is 20,000. Now, this means without a doubt that you will go to 30,000 in 1985. I would be most hesitant to build any more residence facilities that are not really tied in with the academic plan. I would try to decentralize the academic plan for the university into smaller colleges — some residential; some perhaps not. But I would hate to see you achieve the situation which occurs on some Campuses where you have 30,000 students all jamed together with no identity except the feeling of hostility towards the administration.

(Brandt) If he is recommending that we don't build residence halls, he is doing a lot of business in something he doesn't recommend.

(King) Well, you have just answered the question for me. I am against colleges and universities building any more bad residences. I looked at residences at lunchtime and they looked exactly like a maximum security prison up there. There were places where you could put the machine guns and keep it socially acceptable. I really don't know what they look like from the inside, but leaving that aside for a minute, the problem is that most people when they have lousy accommodations hate their landlord; and so if there are going to be bad houses, it would be better if students were mad at someone else such as a commercial developer. I think there is some reason to believe that you can give more attention to the student's academic needs and the student's personal needs as a complete person if some of the housing at least is instituted by the institution. I think this is particularly important for freshmen and sophomores at non-urban institutions. Students are going off for the first time away from home, and they are really not quite sure of what they are getting into. They would be a little more secure if they were doing it from an institutional vantage point. They may then move off the next year to a house off campus, a fraternity, or someplace else. But I think there is a good reason to have some sort of housing under university control for younger students.

The other sensible thing for the university to do is to provide the housing that it needs for its own survival that, somehow or another, is not being provided by the community. There is a good deal of talk around here about the student, but all institutions have as their first objective their own survival. It may be necessary to build housing for graduate students if you want good graduate students. It may be necessary to build housing for junior faculty if you don't pay them enough to permit them to buy housing on the open market. I think the institution has to stay fairly loose about what kinds of housing it puts up in terms of its particular needs at any given moment.

(Riker) I raised the question of renovation in connection to this campus. I have not seen the buildings, but I think for the sake of the owner, it is really a self-preservation matter from the point of view of the institution. I don't see how you can hope to expand healthfully and still maintain the kind of housing that keeps people mad.

(Question) How do you explain the difference in costs between the $6,000 cost per bed in the co-ops and the $7,100 for the university?

(Shepard) The co-ops got a good deal on the architect's fee. The plans were approved by the students themselves. We had many students in architecture working on this. The halls by no means are as elaborate as the halls built by the university. The halls did not win a prize from the Association of Architects. I don't think it measures up to the university standards, but I think it will last 40 years. This is the idea — you build for 40 years because that is the length of the mortage; but most universities build for eternity.

(Brandt) The questions which were not audible dealt prolifically with how we justify the regulations which Virginia Tech has in its residence halls. How or why do we require people to live in the residence halls? The young lady hadn't visited Blacksburg lately, but it is reasonably apparent that there is little space available in Blacksburg if all of a sudden we were to change the dormitory policies and say to students: "Please live in town." She questioned the regulations in regard to men and regard to women,

and for those of you who are new to Tech, these regulations are primarily rewritten by a group of students each year. Somehow these students seem to feel that there should be a difference. I imagine as we get to the point where students feel there shouldn't be a difference, there probably won't be.

(King) I am in complete sympathy with your question. Women are mature and responsible at 16. Men don't have any brains until they are 30. If I had may way about it the men would be required to live in behind locked doors and the women could live anywhere they wanted.

(Farmer) Regarding this business of students making their own rules and regulations; when I was in school we made our own rules and regulations, except who were we — we were the big women on campus, the hard working goody goodies, etc., who sat down in our constituted meetings and made our own rules and regulations under the eye of the dean of women (whose approval we needed for various reasons that are quite obscure at this point), without asking any of the other girls for their opinions. Sure, we were making our own rules and regulations, but not in any effective sense. We were first of all not representative of the students we were purporting to represent and we were, second of all, making the rules and regulations that the administration obviously wanted us to make. I think the only time we ever disagreed was over the question of whether or not we could wear slacks to the dining hall.

(Riker) I think there is a very realistic reason why on many campuses there are regulations about residence requirements for students, and it is tied in with the financing of the buildings. I don't know about here; but certainly most bond resolutions that grant the money to build the buildings also say that it is necessary to insure maximum occupancy through the appropriate residence requirements. In that respect is can be quite a business proposition.

(Question) What do you mean by the term "bad architecture?"

(Shepard) I'm sorry I used the term "bad architecture." What I meant to say is that the building, I believe, will not last as long as the university building. It is successful because the students put themselves into it, into raising the money, into designing the things; it's theirs.

Maybe I have sensed your question. Is there an environment you can see in co-op housing that you are criticizing now in the university housing? If there is, is this because of the architectural development or do you just give them removal of university restraint?

I think there are a number of factors. The first is the self-selection. The student who goes into the co-op goes in there because he wants to mingle and work with people. Second, he is far less affluent. Third, he probably is not so much socially oriented as the people in fraternities and sororities and as some of the people in the residence halls. It's his life and he's living it. No one interferes with his life. The board of directors, and it is composed as I stated, principally of students, is thought to be an alien body and the members will just come to our meetings and raise cain if they think we are getting involved with house affairs. So the unit is as a house; it is self-selection; the people are there because they want to be, not because their parents sent them. This is often the case in the residence hall — the people are there because their families insist they go there; and they get out as soon as they can — as soon as they can persuade their parents that they should live in an apartment.

May I amplify that a little bit. The co-op isn't necessarily architecturally bad, and I would think it would be wrong to leave that impression. It's neither better nor worse architecturally than many of the buildings on the Berkeley campus, but it does have a rather primitive finish inside because it had a very limited budget; but I think it had a number of virtues that didn't just happen. A lot of students had spent a good deal of time programming this building. As a matter of fact, they even succeeded in beating us out of a small grant to carry on a study at the school of architecture on their furnishings, which were made out of chipboard. It looks sort of like shredded wheat glued together; it's very adaptable and it's very ugly,

but it seems to work. It's also terribly cheap and the students put it together themselves after they had it precut somewhere else. However, they did spend a lot of time thinking about what kind of a place they wanted it to be, and I think this has helped to pay off not only in the place itself, physically, but in their attitude about the place. They participated in its design and development.

(Question) How old is this co-op building that you referred to?

(Shepard) I think it's about five years old now — four or five — I don't think it has been open for more than three years.

(Question) Is there a possibility that the co-op dorm is a success now because the students who designed it are still in residence? When you pass through a four-year generation of students and you get a group of students, none of whom were there in the planning of the building, furnishing, etc., will it still be the success that it now is?

(Shepard) Quite possibly.

(Question) Part of the differential accounts to the fact that you didn't work under our minimum wage law, either. Is that true?

(Shepard) No sir.

(Question) You did not have minimum wage on campus? Insofar as the operations are concerned? Construction?

(Shepard) No, the construction was union construction.

(Riker) I wonder if we are skirting a topic that I would just like to touch on because I think a number of architects are here. I get concerned at the fairly common procedure (and I guess this is really the fault of the administrators of the institution) of a group going around a country or within an area and looking to see what other people are doing. Then they come back and make a combination of what they saw into something for a particular campus, which may not be at all relevant to the needs of that campus. I think they ought to spend more time in finding out what a particular campus needs and do things in an imaginative and creative way. The

problem that I think all of us see on different campuses is how poorly these housing projects have been thought through. I'm not blaming this on the architects alone; I'm just saying the architects are going along with the inadequate planning of the administrators for whom they are working. I think some of you ought to do something about it.

(Shepard) You know, I have made some remarks about architects and I was joking. I like to stay clear of this. The architects have performed in a splendid manner. They have done what we ask them to do. I have no quarrel with what the architects could do. They did just what we — the planners — asked them to do. But we were at fault — that's all there is to it.

(Question) Is there a greater variety in room arrangement, etc., in the co-op?

(Shepard) The student planners stressed this to a great extent. They have single rooms and double rooms — I don't know if there are any larger than that; but the rooms are of different shapes, sizes, etc.

(King) As a matter of fact, what's wrong with its architecture is a certain lack of discipline that I think was produced by this desire that the students had to have a great variety of room shapes, sizes, and numbers. There are a significantly higher number of singles in that building in proportion to its size than you would find in university residence halls; also the lounges there are farily modest in size by university standards, but they seem to be used rather heavily the couple of times I've been in there recently.

(Shepard) In the co-ops we use our dining area as a lounge as soon as it is vacated and the kids have free coffee and peanut butter and bread anytime they want after dinner.

(Knox) I think Jonathan King is touching on a point that is very appropriate and relates to some of the accounts here about the kinds of rooms that a student seems to like. Someone here at Virginia Tech talked about Lane Hall, formerly a residence hall. I know that I refer to the buildings at the University of Chicago when they were converted to faculty offices — these were buildings that were very

popular. We have been able to trace their popularity to odd-shaped rooms, architectural turns, nooks and crannies, and things like the eaves. About URBS — how is the structural ceiling system of URBS going to provide the nooks and crannies we love?

(King) You know, Mary McCarthy wrote a whole novel about it called, *The Group*. Could you imagine writing a novel about, not the group, but the third floor. It somehow doesn't go. I think we aren't going to create those kinds of special spaces out of URBS. But I think that, indeed, it is too bad in many respects that we aren't in a position to finance the construction of buildings that have that kind of special space in them. The dormitories that I have to visit and sleep in in the course of wandering around for EFL tend to be among the dullest buildings that you get into and none of the rooms differ one from the other. At least within URBS you have some ability in a two-dimension sense to rearrange plans, but you won't have much ability in a three-dimensional sense to do much that is exciting, although you can presumably leave out floors periodically and have two story lounges. But I can't picture doing an industrialized building system to produce picturesque architecture, and I don't think we are going to do it with this one.

(Farmer) That's not quite the point. I think you have to go back to the question of why these nooks and crannies, etc., are so important. From talking with students, if you really try to pin them down, it's because their space is different from other spaces. URBS won't do it as picturesquely, certainly, but it begins to get at the essential thing, which is again control over your own space (being able to make your space different from the next door space and the downstairs space instead of this "cookie cutter" appearance).

(Riker) Won't the furnishings do this, such as you referred to this morning, i.e., this ability of building blocks kind of thing. You can almost put them up or take them down.

(King) Well, we hope that it (URBS) will help

to do it but I really don't think it will in the same completeness that say Stiles and Morse College does it. You get in some of the really old buildings on a college campus where the time has made the eccentricities quaint and amusing and lovable instead of just nuts.

(Shepard) I think that Mr. Knox's question should be answered directly; and I think one thing that has come out of this conference is that Mr. King should go back to EFL and produce a nooks and crannies building system.

(King) There was a very beautiful steel system that John Lyon Reed developed for URBS and then had to abandon because it could not meet the acoustical requirements for the heating, ventilating, and air conditioning system. It utilized the same tubes both for the ventilating, (the duct work) and structure. None of the other systems that I saw seemed to be as architecturally interesting as the HOK system. There was one other that the Engineers Collaborative in Chicago developed, but unfortunately they were compatible with only one HVAC (heating, ventilating, and air conditioning) system, which dropped out of the bidding at the last moment, taking along two structural systems because the HVAC couldn't meet the acoustical requirements.

The architecture can help a good deal though. I spent some time a couple of summers ago living in a dormitory at the University of Copehagen where I had a single room which I would guess was something on the order of 250 square feet with shared bathroom facilities with the lady next door. Because they apparently don't even separate people by sex, I found this an extraordinarily comfortable space. This was due, in large part, to the fact that I didn't see her for three days, and when I did it was a horrible blow — she was replaced by a Japanese spy. The building just had plenty of space around and that makes a gigantic difference when you don't have to run down the hall to go to the bathroom. If you want a drink there is a bar downstairs which is run by the students. There is a fireplace in the lobby. You have a feeling that this building was put together by some-

one who was concerned with the comfort of people rather than being put together largely on the basis of what is the absolute minimum number of square feet you can wrap around a given number of students.

(Question) What do we do about obsolecence in the URBS system and what are we going to do about ripping them down?

(King) This question comes to my mind as being somewhat less important than getting them up in the first place. One of the things you learn when taking about obsolescence, which is an "in-thing" to do in architecture, is that it is very hard to get a system of building components developed in which the various components will wear out simultaneously. We had once thought in URBS, for example, of not worrying about the lifetime of certain subsystems such as the HVAC, instead of bidding this as a thing which you would buy as a service such as a telephone. You buy hot and cool air. Then let the manufacturer worry about his unit lasting 10 years or 60 years, and let the market place determine which of those two approaches would give you more economical ventilating. Unfortunately this was too eccentric to pull off, but it's still a good idea. We did think in terms of certain subsystems having a much shorter life expectancy than other subsystems within URBS; and, therefore, it was important to be able to replace them independently. If a structure of that kind is useful in that place it will go on virtually forever. But the electrical system will be shot in, say 20 years, the heating, ventilating, and air conditioning in 15 years, etc. All of these will have different wearing powers. The plumbing probably ought to be pulled out and replaced in 25 years if it hasn't been already.

How do you get in there to pull it down? Through the front door. The concrete slabs? The concrete slab has openings that are preplanned for access to plumbing, electrical lines, and the HVAC. Actually the question is a perfectly valid one. One of the big problems they had in Habitat were those bathrooms — if you got the bathroom installed and somebody dropped a monkey wrench on it, you couldn't get the bathroom out once the building had been put around it; and it was very difficult to repair. So they were changed and put into smaller sections so you could get them in and out the door.

I think every member of the panel has agreed that diversity is the most important thing in housing; and if you carry this to the extreme, then you let students live where they want to live and a very large number of the students will live off campus. What happens to the living-learning center — the intellectual climate — that you have been discussing here today if students live in town? Do you then just throw out the living-learning atmosphere?

It seems to me that this is the essence of competition. If the living-learning complex that you built is suddenly running at 80 per cent occupancy then it behooves you to figure out something to occur inside that living-learning complex that is going to pull some of those people back from living downtown. What seems to me implicit in the whole concept of variety is that the competition will exist and will tend to work for the benefit of all types of living on campus. I think very often these living-learning projects start out with a tremendous burst of enthusiasm and with faculty members who are really interested in making the thing work, and then it suddenly becomes a kind of erroneous thing that you have to do if you are a junior faculty member and can't get out of it. Very often the students sense this and tend to loose interest in the whole concept.

(Farmer) There is also the possibility that if there were any place to live on campus besides the dormitory, fewer students would choose to live off campus because living off campus presents them with certain inconveniences. Distance is one, cooking is another, and many colleges have found that there is a reverse to this trend. Students will move out of the dormitory the very instant the parental rules are taken away. They go off and live in some crummy apartment in town for a year and they have to do their grocery shopping and their cooking and then have to drive 20 miles back to campus to get to a library. This gets to be a pain in the neck, so they

come back to campus for those sorts of reasons. I think the point of variety is to not force them to go off campus in the first place in order to have a decent place to live.

Those of you who have seen *The Graduate* will appreciate, from looking at the off-campus housing around Berkeley, that it may be possible to get some of those students back into the dorm someday.

The question deals with the concern of whether there is any move afoot to create this teacher-counselor that Dr. Riker referred to in his presentation, or whether they are just going to continue to be something which we can refer to by word but which doesn't actually exist.

(Riker) One point that you made at the last, as I understood it, is the problem of getting people to live in. I don't think this should be a requirement. For example, I think it should be quite an optional matter. Faculty and staff are human beings, too. They ought to have certain options and I think sometimes they have not been so governed. I think this whole notion of the teacher-counselor is going to take some additional new looks at the kind of graduate training that is now available. As a matter of fact, it is exceedingly difficult to get people with this combination of abilities and interests; so I think it is something we are going to have to, in a sense, program through some of our graduate studies.

(Brandt) Although I am not part of the panel, may I comment? I would guess that a significant element is going to be whether this gets built into somebody's reward system or not. If you come up with a good mechanism for rewarding the teacher-counselor adequately and effectively, not just financially, but otherwise, you will find there will be teacher-counselors.

The question was related to the Tech campus, but I think it applies very generally. What do you do, as your campus gets larger and larger, about keeping the dormitories within reach of the academic buildings so that the dormitory student doesn't become a commuting student?

(Riker) Group them together. I think this is one of the common problems of the very ordinary campus plan. Housing is very neatly a separate function and this is one thing that I tried to speak to. I think too many campus plans emphasize separateness rather than trying to establish unity. I am avoiding the word "togetherness" as the alternative. I think it can be done, but I think what you are talking about is a real problem and should be restudied. I hope some of the campus planners are present.

(Question) What does the panel feel is the optimum size of a university?

(Riker) It is the size of Harvard. Any place that is good is the right size. You never hear about somebody saying he can't go to Harvard because it is too big or too small. Seriously, I don't think there is optimum size, and I think it is just the question of how we manage people within different sizes. I think there are problems of growth. We have gotten into problems on a number of campuses by simple linear growth of things as if it worked well this way when the campus was small, so it will work well this way when the campus is big. Things have to begin to be planned for growth within subgroups so they just don't go on, as Lou Kon says, in nature. A daisy has a certain size. When you have a field of daisies it is made up of lots of daisies, not just one big one. And I think that is sort of the way it is with universities, too.

I would like to add one other idea. I think Jonathan King is absolutely right. There are two factors I would like to mention in response to your question. One is the student-faculty ratio — this is highly important. And the second is the devotion of the faculty to providing good undergraduate and graduate instruction. You could go to 100,000 if these two factors work out.

Adjournment of panel discussion.

(Question) I would like to ask Mr. Harkness if a client has ever presented a residence hall program which he has felt was so bad that he refused the job or argued with the client so violently that he lost the job?

(Harkness) You are speaking particularly of residence halls, I guess, and the answer as far as I can recall is no. The general question of trying to clarify programs in residence halls and in various kinds of buildings is, I think, increasingly difficult. It is difficult in the first instance because the people you get the program from are not necessarily the users and this is the case generally in residence halls or with public housing, for example. You are dealing primarily with somebody in between who is interpreting a need. Very often you think that person is the client, but then you find later that this person really isn't the client. It is a governmental agency who says (if we are speaking of HHFA housing, for example) even though the building meets the budget, if they think it looks extravagant, they don't want the government to finance the thing. Therefore, they say you have to change the design. This has actually happened in the case of the Brandeis job. We actually modified the design, but because HHFA felt that what we were doing looked extravagant — even though our estimates appeared modest — and they didn't want to be involved in something which they thought might be extravagant.

Therefore, I think identifying the client as the person who is the ultimate user is one of the very great difficulties that architects face. Even if you go directly to the apparent user, the immediate user really isn't the answer, either. If you interviewed every student in school, those students aren't going to be in school for the majority of the use of a particular building and may not represent the average long-range user of the building any more than we, who went to school some years earlier, do.

I'm walking away from your question a little bit. I think the answer to your initial question was, no, we have never, to my knowledge, refused a job or annoyed the client so intensely with our attitude about his program that we refused to do the job. I think we have, on occasion, argued with them enough to bump the budget up to meet the program. The more usual thing is that the client wants more in the program than you think he can afford to get for the budget which he has also established. This is the most usual kind of struggle that the architect is having. Of course, Charlie accused us of bumping our work up to make a few bucks but that was a dirty remark.

(Question) What kind of influences can you use on the client to make any adjustment in the budget or the program?

(Harkness) In the first place, I don't think we are necessarily always qualified to state exactly what the program should be. We have not been through these kinds of research programs which were pointed out as being desirable to try to get at an in-depth approach to what solutions should be. But, I think what we can do is expose clients at least to the range of potential solutions that we know about through our own experience, or through seeing what others are doing, or through ideas that we may have developed. I think an architect can expose his client to this range of possibilities, within the framework of the budget and program. The same question applies in many different fields. I remember being involved in a secondary school program one time in which the architects were being heavily attacked by one of the

educators as being bogus educators. The educators felt that education was none of the architect's business. We should simply interpret the program as it is given to us and try to come up with the best answer.

I think we do play a somewhat ambivalent role in this respect. We are, on the one hand, in a position of trying to interpret in the best way we can the program that is given to us, within the budget. On the other hand, we maintain certain attitudes as to how things might be better. I think we inevitably try to guide our client in those directions. Some clients may have, for example, a very strong desire not to let people walk out-of-doors. They begin with the idea that the old MIT campus type is best; that is all buildings connected by interior circulation. If you propose a scheme where you have an entry system for dormitories, people are using the outdoors all the time. This is the kind of thing where you can sometimes convince a client that a little fresh air doesn't hurt anybody, although it makes them somewhat less comfortable on a short-term basis.

(Question) The inference that was made in Mr. Harkness' address was that housing is necessary to the overall function of the university. The question was raised whether this would involve the total student body, or just segments of that body. In the experience that he has had with the universities he has worked with, is this a correct premise?

(Harkness) I would definitely say that there are segments — and the proportion would depend entirely upon the particular institution, such as Virginia Tech — where there are relatively few other accommodations in the area, and where commuting tends to be rather distant. Obviously, the percentage is relatively high, almost 70 per cent is the target figure here; in city institutions, the reverse is true.

I do know that at places like Harvard, where there is perhaps the possibility at least of having a much lower percentage than they actually do, the people running the university have an attitude that a fairly high percentage of on-campus accommodations is desirable from the education point of view. Also,

they strongly desire to increase the amount of faculty that are living near the university rather than in distant suburbs, where they are available for the eight-hour day. They want to have their faculty where they can be accessible to the students, and where they will be involved on a much longer basis. This came from a rather lengthy study report made by the faculty itself on what direction it should take.

(Riker) Do any of the speakers know of ways in which the commuter student has facilities provided to help him incorporate himself in the life of the university as a whole?

(Ding) I would like to respond from Australian experience. In Sydney about three years ago a third university was instituted. It was over-nice on the basis of the matter of reform that is going on in the county, to the effect that schools are no longer vertical departments. Interest areas are set up and so on, plus the fact that they were trying to cater to the commuter class. They were thinking of moving the classroom out to the various community areas in order to economize on the time the commuters waste in coming and going. This is the New University at Sydney.

(Harkness) I will make one comment on that, too. You undoubtedly know that many places such as Harvard have commuter centers which have these facilities, much as a central building of a dormitory group would have. I don't know if it is directly related to that point, but one of the things I think that I find scary about most of the colleges which are based entirely on a commuter student body is that they have resulted physically looking like shopping centers with large parking lots around them. I don't know what the answer to this is. I did make a little doodle which I decided was even worse than the other one I showed you in the slide, but the idea behind it was that parking, which is such an important problem in relation to universities — particularly in fairly dense urban situations — might produce an architectural element. Instead of just filling up the vacant lot somewhere, or making a parking garage, I was wondering about the old cities

which we get quite excited about when we visit Europe, with the walls running around or through, defining sub-areas within the city. Very often these sub-areas are primarily pedestrian circulation, because they weren't designed for automobiles. Could we develop a linear type of parking structure almost as a wall, multi-story, perhaps 60 feet wide, giving access at multi-points to an interior contained pedestrain area. Now, there is the obvious danger here of cutting the university off from its surrounding area or creating an intellectual ghetto, but I think this is an element that we might be able to work with architecturally to avoid the parking lot problems, thus making a positive statement, instead of just a negative thing, out of the parking problem.

(Question) How should the university relate to the community?

(Prieser) The only growth in the town when this university gets to 20,000 will be the increase of faculty living here. There is nothing else to support a community of this size.

What do students do on weekends? They leave the city, and why would you want to detain a student on Saturday night and Sunday. What is so bad with their leaving?

(Burchard) I don't know if it is so bad, myself. I tend toward the view that was expressed several times yesterday and today that possibly variety is the spice of life. I think we are not suggesting an either/or situation, that you have to provide these facilities to capture them, but rather provision for all the possibilities for students to undertake a number of things. I think the emphasis here is that the deficiency in Blacksburg has to somehow become a balance with something on the campus and that, in turn, within the town. I think this will develop. I don't think we should plan someone's life that closely or they are going to react against it in all events.

(Question) How will the URBS program evaluate the actual buildings from the point of view of the students as to whether they are successful or not?

(King) We haven't any present plans for

geared to the sense of freedom, the sense of your not being subjected to what you might call the arrogance of the architect forever, but with some freedom to manipulate the environment in a sonic way in terms of its esthetic appearance and in terms of the arrangement of its furniture. It isn't a question of comfort for comfort's sake. We certainly are favorable to coddling the American post-adolescent. But it really is based on the notion that if you want quiet study space you have to be able to provide some quiet, and if you want to provide quiet in an environment which is increasingly electronic with all sorts of noise makers up and down the hall, you have to make provisions for this in your partition system, your doorway openings and your air conditioning system to make it possible to have that sort of thing we think of as functional and reasonably attractive study conditions.

(Burchard) It's a matter of evaluation. I think we can predict, based somewhat on physical systems, what the result will be, and I think even most architects might have the know-how to avoid for example, transmitting the flushing toilet to you and your room. On the other hand, when you are dealing with the physical condition of the building, the human being is so much meat on the hoof. But when you are speaking to him in response to environment, you are talking about a behavioral animal. We were saying something about ways of predicting behavioral response. I was wondering if Day Ding might comment to what extent this sort of analysis might be available to the architect in his office, for example, in the very near future as a kind of feedback so he doesn't continually make the same mistake over and over again.

(Ding) I don't think I have any answer to that question, except for some thoughts. It's true that physical aspects — particularly when the program had been set up like the URBS program, where performance standards had been clearly stated — make the physical evaluation comparatively simple. It nevertheless brings the question of how well it suits the total environment, and this question I

evaluation of the buildings, but we certainly will attempt to evaluate them and develop some plans to see if this kind of an effort is sufficiently strenuous so that you can cross the hurdles one at a time. I think our problem now is to get them up and then evaluate them.

I would, while I have the floor, like to counter-attack Chip Harkness for these several sniping attacks that have occured today. I would really hate to leave this conference and have you think of me or EFL as the great American comforter. I think you missed the point of URBS if you think of it as comfort versus stimulation. I thought of you this morning when I was stimulated by a gigantic noise in the room next door, which turned out to be the toilet flushing. The URBS program is geared to the notion of students controlling their own environment. It's people, and amongst nations of the world; therefore, it does seem to me that the element of flexibility ought to be carried through in terms of design, so that we keep to the concept of probability, instead of seeking to evaluate as a computer does most of the time, a number against a number. This would not be possible. Therefore, this sort of arranging of our objective would be the first thing that we have to do.

(Trieschmann) My thought there would be that it relates to Dean Burchard's introduction regarding the death of the patient and doctor who buries him. He also conducts an autopsy on him and I think the architect is failing there. He may be passing it to somebody else, but it's possible in the existing environment to find elements that are worthy of investigation, to experiment with them, and to observe what's there and come back with a feed forward to the next design. I think we have been failing here. We have sort of been leaving it to somebody else. The behavioral sciences seem to say, "You are the architects, you are supposed to do that." And the architect in these interdisciplinary conferences is saying: "Isn't that your job, don't you do that?" The results have been a big gap. Its just aching for somebody to put some things in it. In regard to the commuter, I thought this is a question

we have asked. It seems that we could answer it in the good old American way and experiment. In other words, how far can you move the student before he quits coming in his car, and what sort of transportation system might you try on him. We seem to be building at such a rate that this is feasible now.

Would it be facetious to add a paragraph to the AIA contract asking the architecture to submit a report one year after occupancy, evaluating the building.

(Burchard) This is what I was getting at. Some of the tools would be available to the architect to do this. There is no point in putting it in the contract because there is no way of accomplishing it.

(Trieschmann) Going back to the student-use side of this evaluation of the success of the design of residence halls — the relationship between the amount of use by the occupants in the building of

(Burchard) You mean, if that's a measure of their disagreement with the design?

(Trieschmann) I think Sim Van der Ryn is pegged into an area there when he goes to the student and talks to him and uses various methods of feeling him out. The depth that you go to would probably in this particular case require more sophistication than the average architect wants to get into this area. In other words, the dynamics of his relationship to his environment. On the other hand, you have to do something; you have to find out, so if you go and observe, you might see certain things that are being ripped out in certain environments by certain populations, and I would refer to Mr. Harkness' saying that the user at any particular moment might not be the ultimate user. He is the only user you have to watch and to gain data from in that particular environment at that particular time. Granted, there is a dynamic thing that will continue to grow at any particular time. If they are destroying a certain form, then that form should be looked at and understood. These studies are just beginning. In other words, there is no real reason to expect results that the designer can use for the next five or six years. But I think Van der

Ryn, Alexander, and some other fellows are beginning to get at it. They are making the first order mistakes. Then we can go back and redo that and grow hopefully.

(Harkness) I don't want to go away with the impression that we don't love EFL; we have some grant applications in, too, and we think they are great. Also, quite seriously, we do subscribe to the things they are driving for in terms of systems, but the point I guess I am trying to over-dramatize is that a system is not a solution, which I know Mr. King also believes. My worry is that quite often I think it has been used as a solution. Look at quite a lot of the English schools (which in many ways have a wonderful system) and you will see what I mean. Now somebody pointed out on the questionnaires that the way you ask the question dictates the answer. The way you set up the factors for a performance criteria dictates the answers that you are going to get also. It implies a judgment factor which I am not certain that I would agree with in every instance. For example, it assumes that all of these levels of performance are necessary, even if you have to reduce the amount of space to accommodate them. There may be another way where you can have cruder space, less sophisticated space, and more of it for the same price. There may be a kind of system which is more of a frameword kind of thing where the systems may be added in where they are needed now or in the future depending on how the functions go. I think this less sophisticated, cruder, bonier kind of system is the kind of thing that appeals to me a little bit more, but basically I am a systems man, I think we have to come to overall solutions and I believe in a little bit of comfort from time to time.

(Brandt) I don't have anything prepared. Gordon Echols said I was supposed to summarize. I feel a little bit like the man who has been down to the smorgasbord table twice, I can't tell you what I ate, but boy it was good, and I had a lot of it. I think that sort of fits what we have done here in the last day and a half and hope it has met your needs. If anything, there are a few things that have come through fairly clearly, one is — and I think Mrs.

Farmer started off this way — you better first figure out what you want. What it is you are after? What are you trying to do? Are you trying to build a nocturnal disappearing place? Are you trying to build some sort of program? Is there any need to build dormitories? You've got to start, as most of us have not, with some plan in mind — something that you are trying to accomplish. We were a great diversity of opinion after you start with that initial plan. We have heard considerable comment that residence halls really are nothing but a place to live, they have no benefit to the program, as such. In answer to the question: "Should a commuter college build dormitories?" The answer was no, the students were living in town, let them live there. That's fine and they are getting every bit as much from that as they would if you build residence halls as part of the university. On the other hand, we hear that places like Harvard, if they wanted to, could certainly put all of their students in town, but decided that there is a value in having the students on campus. So, this comes back again to you to decide what you want and what you are trying to do and what in your experience accomplishes something. Certainly, its been made clear time and time again, and we have provided a beautiful example of this, that you can't just settle for the building—you have to have an organizational approach to it. That may be in reality more important than the building itself. I think Dr. Shepard brought this out with his discussion of the co-ops where it wasn't important that they spend as much money in building the building, it wasn't important that it be as plush, it could be hand crafted, pretty rugged sound furniture, and still the students were apparently getting more of what they wanted than from the many efforts to do a plusher and fancier job of providing the same sort of activity sites. So that it may well be that a major portion of the total problem resolves in the organization for the operation of these units and not in the units themselves. Maybe what we are saying, and a wander down the hall when they are not ready indicates it, is that students aren't real fussy about how their rooms

look. In fact, maybe a little disorder is rather pleasing. The beauty and a certain amount of inconveneince may not be the most critical thing to them, but their freedom, their ability to have privacy, and their ability to have complete freedom of usage of this facility may be far more important than whether the wall is brick and whether they have beautiful liahti~ ~ r whether they don't, etc.

There ... !c, of competing factors here. We have heard an.. :~:~ a iot of good examples of many attempts at residence hall building, some of which look beautiful in pictures. We have heard enough comments raised to at least question whether that is going to achieve the goal, and we have enough answers to indicate that in many cases it will not. We've certainly been told repeatedly by practically every speaker that you've got to do a fair amount of just plain guesswork because, as was illustrated by institution after institution, they built what they thought would do the job, and five years later the student wants had changed so drastically that they had to upset the old apple cart as we heard in the University of Chicago, which in less than 10 years had to single bed all double bed rooms. At the time they built them somebody thought this was the way to go and at that time there may have been no way of knowing that student desires were going to change that much. I think Chip Harkness' analogy here of changing from a dog to a cat type of society was particularly good. We have gone to a tremendous emphasis in the United States on the freedom of the individual and it epitomizes his particular room. If you go back 10 or 15 years that wasn't such a big kick and it wasn't nearly as important to people and 10 years from now again it may not be. We may go back to being much more of a sociological grouping type of animal than the cat, so it seemed to me fairly clear as to what was said today that you've got to try to figure· out in your own situation what is going to do the best job for you. There is a real good chance that you are going to be wrong because the society and the wants of the society aré going to change rapidly. By the time you get the thing programmed, planned, contracted, and built, you no longer have the same student body you have now; you no longer have the reference base that you used for expectations. The world has been changiny pretty rapidly and the whole thing may be a bust, but grin and bear it because everybody else is operating in the same sort of environment.

We are certainly pleased to have had you here. I think there is an element of what I presume our College of Architecture is trying to teach these days in this conference. They keep telling me that it isn't sufficient for an architect any longer to worry just about the building, he has to worry about what it does and how it influences the way I feel when I get up in the morning, and how it influences the way I feel when I come home from work at night, and what it's like when I walk down the street, and somebody has really designed this so that it affects me. So the idea of sitting down with student personnel people, administrators, and architects, all in the same room, hacking at the same broad problem seems to me to be extremely worthwhile and I personally have found it very beneficial. I hope that you have a very good trip home and thanks very much for coming.